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COMPANIES & MARKETS

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INSIDE

Unisys raises $207m with Timeplex sale

Unisys, the debt-ridden US computer company, is selling its Timeplex networking subsidiary for $207m to a joint venture led by Ascom Holding, e Swiss telecommunications and automation company, together with its partner Mercedes Information Technologies of South Africa. The Unisys move is part of a plen to raise cash by selling assets. Timeplex, which had 1990 sales of around $250m, manufactures local area networking systeme for voice, deta and video transmission. Its main customers ere large industriel and service companies, primarily in the US and Europe. Page 22

Lex sells US offshoot for $150m

LEX SERVICE

Lex Service, the largest UK vehicle distributor, is to sell its electronica component distribution operations in the US and Caneda in a dsal worth $150m. Arrow Electronics, the eecond largest electronic component distributor in the US, will pay Lex $106m in cash and 6.6m Arrow shares, worth about $9 each. Lex, headed by Sir Trevor Chinn, is elso trying to sell its European electronics businesses, which heve e net asset value of about £30m ($50.1m). It would use the proceede from these sales to reduce group borrowings. which stood et £104m et the end of 1990. Page 26

EMAP's first fall in 10 years

EMAP, the publishing and exhibitions group, yesterday announced pre-tax profits for the year to the end of March of £30.8m ($51.4m), compared with £38m last year — the compeny's first fall in profits for 10 years. Mr Graham Ross Russell (left), EMAP cheirman, said the trading results reflected severe pressure on the economy. In the first three months of this year, EMAP's newspeper revenues fell by 13 per cent to 14 per cent and business magazines dropped 30 per cent compared with the same quarter last year. Page 26

No copper-bottom guarantee

Copper supplies this year would be hard-pressed to cope with any unexpected and serious fall in production, according to RTZ, the world's largest mining group. It warned that total copper stocks remained low while producers would be unlikely to escape the problems which held back production last year. Page 28

Barlow Rand comes full circle

South Africe's largest industrial group, Barlow Rand, is ehifting its focus away from mining and processed minerals, the main source of profits in recent years. The move has been spurred largely by the fact that the fortunes of this industrial flagship have been lergely determined by movements in world commodity markets. In the 20 years eince taking control of Rend Mines, Barlow's involvement with mining has been inauspicious. Now the group is presiding over the dismemberment of a once-proud mining house. Page 21

Market Statistics

Companies in this issue

Chief price changes yesterday

FRANKFURT (DM)				PARIS (FFr)			
Rises				Rises			
Asea Brown	1250	+	50	Dassault	1975	+	46
Kali & Salz	168	+	11	Fonc Lyon	780	+	30
Jagenberg	555	+	9	Geophysique	781	+	31
Falls				Falls			
[illegible] Zem	1110	−	15	BIC	733	−	17
Hochtief	1460	−	23	Gaumont	464	−	15
Karstadt	673	−	7.5	Union Immob	585	−	15

NEW YORK ($)				TOKYO (Yen)			
Rises				Rises			
Live Entor	11¾	+	1⅝	Mitsuuroko	1060	+	60
Occidental	22	+	⅝	Sasaki Glass	780	+	53
Proc & Gam	83	+	¼	Tokai Kogyo	1490	+	130
Falls				Tokyo Seisakusho	2060	+	140
Citadon Ins	8¼	−	2¼	Falls			
Ford Motor	34⅝	−	½	Gajoen Kanko	468	−	59
Xoma	22¾	−	5⅛	Matsuzakaya	2740	−	310

New York prices as at 12.30pm

LONDON (Pence)							
Rises				Meltiore	77	+	10
Airsprung	188	+	11	Ranger Oil	435	+	15
BET	172	+	5	Reed Intl	414	+	11
Beazpak	402	+	11	Unigate	282	+	12
British Land	281	+	8	Vickers	208	+	5
Cable & Wire	515	+	18	W'thington (AJ)	33	+	4
Control Tech	227	+	63	Falls			
Copson	31	+	5	Marlon Dev	210	−	20
Douglas (RM)	455	+	30	Savills	43	−	5
Elect Data	129	+	5	Unilever	744	−	11
Faupel Trdg	78	+	8				
Intercare	81	+	12				

Adia seeks SFr174.9m capital injection

By William Dullforce in Lausanne

ADIA, tbe employment and services group taken over in March by the Swiss businessman, Mr Klaus Jacobs, and Asko Deutscbe Kaufhaus, tbe German retailing group, plans to raise new capital and sell off the companies which have no connection with its core business.

The capital increase, which includes e rights issue, would raise SFr174.9m ($118m) if fully subscribed, and bring shareholders' equity to about SFr640m. A SFr100m provision against restructuring costs is also being created against reserves.

On the basis of the 1990 figures, the disinvestment, if carried through, would reduce turnover from SFr5.7bn to SFr3.3bn but leave Adia as the world's second-largest temporary employment group after Manpower.

Up for sale are Inspectorate, the inspection services company; the security service companies Protectas (Europe) and Network (US); and the Meridian computer leasing businesses in Europe and the US.

Adia earlier announced a boardroom shake-up and the replacement of Mr Yves Paternot, chief executive, by Mr Nico Issenmann, formerly an executive with Jacobs Suchard, the Swiss chocolates and coffee group, in which Mr Jacobs last year sold a controlling interest to Philip Morris of the US for e net personal gain of about SFr2bn.

Mr Jacobs will become chairman of Adia's board, which will include three Asko representatives, Mr Helmut Wagner, chairman, Mr Klaus Wiegandt, chief executive, and Mr Franz Suchan, finance director.

After buying its controlling stake from Omni Holding, Mr Werner Rey's master company now under court protection, the Asko-Jacobs partnership brought in Price Waterhouse and the Boston Consulting Group to advise on the group's financial structure and future strategy.

Mr Issenmann said the conclusions were that the group had too small a financial base to be committed in so many different fields and tbat beavy investments would be necessary to establish Adia as the world leader in temporary work and personnel services.

Under an 11-for-1 rights offer shareholders are being offered bearer shares at s price of SFr750 each. Holders of participation certificates will be able to buy bearer shares at the same price at a ratio of 55 to 1. Subscriptions will open on July 25 and close on August 2.

Mr Jacobs and Asko have already exercised their subscription rights and bought 70,000 bearer shares for SFr52.5m. In addition, holders of the SFr62.7m convertible bond expiring in 1994 have accepted e premature, discounted repayment of SFr51.7m which has been reinvested in 68,972 shares at the same price of SFr750 each. Mr Jacobs and Asko have bought half these shares.

So far these transactions have increased Adia's capital by SFr104.2m. A further SFr70.7m will be raised, if all holders of shares and participation certificates exercise their subscription rights.

Hit heavily by the recession in the US, UK and Australia, Adia posted e 43 per cent fall to SFr115m in 1990 consolidated net earnings. Mr Issenmann said the parent company, which operates to a fiscal year ending June 30, would cut its dividend.

Despite the earnings slide, Adia said its share of the temporary help market had increased in almost all countries last year.

Mr Yves Paternot, outgoing chief executive, said Adia had increased revenues from personnel services by 3 per cent in 1990 while Manpower's income had declined by 3 per cent.

In the first three months of 1991 Adia's revenues declined by 10 per cent, Manpower's by 12 per cent.

Government rejects chemicals group's business plan for new investment

Politics and profits at odds in Italy

Haig Simonian reports on the credibility crisis facing EniChem

SINCE moving back into the public sector last November, EniChem, the world's ninth biggest chemicals group, is proving how politics and business do not always mix, or at least not at a profit, in Italy.

The company's fortunes have declined since Eni, Italy's huge energy and chemicals producer, bought out Montedison's 40 per cent stake in the former Enimont joint venture last November and then tendered for the remaining 20 per cent on the market.

Earnings have plunged in line with the general downturn in the world chemicals business, leaving EniChem with a loss of L88bn ($68.05m) last year against 1989's profit of L716bn.

Some analysts say those figures were achieved thanks to some nifty work with extraordinary earnings. Meanwhile, sales fell by 1.9 per cent to L15,347bn and net debt surged by almost 35 per cent to L8,341bn.

EniChem's results look set to deteriorate further this year. The company has barely begun the strategy of asset sales, joint ventures and new investments which its management says is essential to shift it out of loss-making commodity and agricultural chemicals into higher value-added prodncts.

EniChem's exposure in these two areas has left it vulnerable to the industry's current downturn. Bulk and agro-chemicals have been plagued by overcapacity and falling prices.

Barring a miracle, earnings are set to worsen this year if the restructuring does not start soon.

Italian politics presents another problem for the company. As a state-owned concern with many of its plants in the poorer sonth, EniChem risks being run more as a social service than a profit maker.

Last week the government rejected the company's four-year business plan as some politicians felt EniChem's carrot of L8,500bn for new investment, some 53 per cent of it in the south, was not enongh to sweeten the substantial job cuts and plant closures in Sardinia, Sicily and the Mezzogiorno.

EniChem's management has been told to prepare a new set of proposals to be presented after the sensitive Sicilian elections later this month.

Mr Nino Cristofori, a cabinet minister, says the new ideas must take into account the needs of the chemical industry and the wider problems of southern Italy, where unemployment is more than 20 per cent.

The political rift triggered by the plan, which called for 4,800 job cuts by the end of 1994 on top of the 5,500 temporary lay-offs already made this year from the group's 50,000 workforce, has spilled over from the company's boardroom into its parent's and right up to the cabinet.

Last week, Mr Gianni De Michelis, the Socialist foreign minister, and Mr Paolo Cirino Pomicino, the Christian Democrat budget minister, crossed swords in the press over the company's future.

The political rift has also placed a cloud over EniChem's prospects. Concern about domination by the Socialists, who already hold sway over Eni, has prompted some Christian Democrats to call for the appointment of a second managing director to flank Mr Giovanni Parillo at EniChem.

There have also been demands for the resignation of Mr Giorgio Porta, the company's chairman.

EniChem must retain credibility if it is to strike the sort of deals with chemical industry counterparts which Mr Porta says are essential for it to emerge from its present difficulties.

So far, plans for link-ups with other chemicals companies are limited to e deal with Union Carbide of the US.

Union Carbide is a leading polyethylene prodncer, while EniChem is Europe's biggest manufacturer of this building block for making plastics. The deal would give Union Carbide, which probably lacks tha resources to expand its production outside the US, a foothold in Europe, and it would boost EniChem's plans to develop production outside Italy.

The negotiations, which Eni's chairman, Mr Gabriele Cagliari, says should be completed within the next eight weeks, are expected to create two new joint ventures.

The first, in Europe, will be controlled by EniChem, while the second, in the US, will be under Union Carbide.

EniChem has also said it is in talks with British Petroleum on another, unspecified, venture and earlier this year, it reached agreement with ICI, the UK chemicals group, to expand their European Vinyls Corporation (EVC) plastics joint venture from a commercial and marketing alliance into a self-contained plastics company.

Many more such deals will be required for EniChem to realise its ambitions to move away from bulk chemicals and broaden its international production base.

Eni chairman Gabriele Cagliari: overseeing a joint venture

EniChem derives 80 per cent of its prodnction from Italian plants and it remains vsry inward looking in terms of sales — around 55 per cent of EniChem's turnover comes from its home market, compared with the top German chemicals groups and ICI which derive about 25 per cent of turnover from their home markets.

If EniChem succeeds in becoming more international and altering its product ranges, it may emerge from unprofitability. Greater credibility could also help it to strike further deals with big chemical producers.

If it fails, matters can only get worse: any hopes EniChem may have of raising cash by refloating some shares on the bourse — a target announced by Eni when it regained control last year — will vanish.

The latest figures show that Eni and its subsidiaries now own all but 0.4 per cent of EniChem's shares.

Brokers say the only private shareholders remaining are environmentalists who have stayed on board to attend — and perhaps disrupt — the company's annual meeting next week.

Mercury avoids local head-on clash with BT

By Hugo Dixon in London

MERCURY Communications, the telecommunications subsidiary of Cable and Wireless, has decided not to compete head-on with British Telecom in the UK residential market but, instead, to focus on bnsiness cnstomers and long-distance traffic.

The decision reduces the likelihood of local rivals developing in competition to BT, one of the main aims of the UK government's telecommunicetions policy review earlier this year.

Cable and Wireless, the international telecommunications group, will shortly announce the change in focus which has stemmed from a review of its world-wide strategy.

The review has also concluded that, outside the UK, C&W should concentrate more on niche monopoly markets rather than trying to compete head-on with giants such as AT&T and BT.

The strategic review was launched by Lord Young, the former Conservative Cabinet Minister who became chairman of C&W last year.

Its conclusions represent something of a retrenchment compared to the gronp's previous ambitions plans, bnt they may be welcomed by shareholders on the grounds that they they are more tightly focussed on commercial objectives. The group reports its annual profits on Thursday.

A C&W executive said Mercury would not "dig up the streets to go to the local market".

He said that instead the company would use its personal communications licence, which allows it to provide mobile phone services, as its means of serving residential customers.

Mercury Personal Communications is likely to be merged with Mercury Communications to form a single company, the executive said. This will bring both operations under the control of Mr Peter van Cuylenburg, Mercury's chief executive.

However, the executive dismissed suggestions that the change represented e loss of power for Mr Gordon Owen, C&W's group managing director who previously had responsibility for the personal communications operations. Mr Owen continues to be chairman of Mercury.

The C&W executive supported the idea of concentrating on niche monopoly markets outside the UK. "Sometimes small is beautiful," he said.

However, he added that this did not mean that "we won't offer e global solution to clients where we are competing against the giants".

Under its previous chairman, Lord Sharp, C&W placed emphasis on its strategy of building e global digital highway consisting of using fibre optic cables encircling the globe.

It is understood Lord Young is not proposing to ebandon this approach bnt is rather contemplating e shift of emphasis.

Ratners issue may raise $100m

By Karen Zagor in New York

RATNERS Group, the UK-based jewellery chain, bopes to raise up to $100m before expenses, by issuing in the US up to 1,000 auction market prefered shares via e private placement to e number of investors, at e price of $100,000 per share.

Ratners, whose balance sheet included net debt of £155m in February, said the proceeds would be used to cut net borrowings.

Ratners came under pressure from the City last autumn when it acquired Kay Jewelers, the US chain, for £207m. Kay, which was then on the verge of bankruptcy, was quickly integrated with Ratners existing operations in the US. Together, they contributed £14m to Ratners operating profits of £134.25m in the year ended February 2, 1991.

Announcing tbe results in April, Ratners said it would cut up to 1,000 jobs or 5 per cent of its staff in an attempt to combat recession in the UK and the US.

Sales grew 24 per cent to £1.11bn to the year to end-February, but costs rose faster, leaving pre-tax profits only slightly ahead at £110.05m against £108.22m before property gains. Fully diluted earnings per share fell 9 per cent to 23.6p.

Ratners said it would be prudent to reduce its reliance on short-term bank debt by diversifying into more permanent types of finance and by broadening its funding base. Much of Ratners' recent expansion has been financed through US dollar denominated borrowings on e relatively short-term basis.

The new US shares, which will not be listed on any stock exchange or offered to Ratners shareholders, will be issned in bearer form and will have no fixed redemption date. They may be redeemed at the option of the company at various times.

The new auction market preference shares (AMPS) are expected to have a dividend rate of between 5¼ per cent and 5⅝ per cent. Since they have no redemption date, they are considered by issuers as equity rather than debt. Ratners' existing AMPS preference shares were issued in the US in three series of 500 shares — A, B and C — in 1989. The new US preference shares will be issued in two series — D and E — of 500 shares each.

Ratners said it would convene an extraordinary general meeting in the UK to coincide with its annual meeting on July 8. It will seek shareholder approval for the issue at that time.

British Land sees 9.6% fall in value of portfolio

By Vanessa Houlder, Property Correepondent, in London

BRITISH LAND, the property company beaded hy Mr John Ritblat which has been one of the most prominent investors in the depressed UK market, yesterday reported a 9.6 per cent fall in the value of its portfolio over the year to March 31.

Its diluted net asset value per share fell by 18 per cent from 492p to 401p. After investing £460m ($736m) sioce the end of 1989 in its largest ever acquisition programme, its interest charges more than doubled to £60.1m from £29.7m, cutting its pre-tax profits from £44.8m to £31.0m.

Mr Rithlat said the company's buying programme wes recognised to have been opportune. "When our market recovers it can do so dramatically, particularly for geared holders of quality property," he said.

"Whenever the cycle improves we expect the company to be well positioned to take full advantage," he added.

The fall in value of British Land's portfolio, now on e running oet yield of 7.2 per cent, was a result of an 18 per cent cut in the value of City properties, a 14 per cent fall in values in the rest of London, a decline of 3 per cent over two years for the provincial portfolio and a steady performance from the overseas portfolio.

The company says the decline in property valoes was mitigated by the value of its new purchases, which have been valued at more than was paid for them.

The acquisitions shifted the emphasis of its portfolio eway from offices and central London towards retail property and the provinces.

The geographical breakdown is the City 24 per cent (30 per cent), rest of London 21 per cent (30 per cent), provincial 47 per cent (31 per cent) and ovarseas 8 per cent (9 per cent).

By use, the distribution is offices 58 per cent (68 per cent), retail 35 per cent (23 per cent), industrial 7 per cent (8 per cent). Property sales made £84m.

The company hes iesued £78.75m of convertible capital bonds and £100m of unsecured bonds, giving it £500m of available funds, which is more than it had at the start of 1990. Treating the £78.75m convertible capital bonds as equity, the deht to equity ratio is 72 per cent.

Net rental income increased from £63.9m to £79.8m. Much of the group's investment has heen in sale and leaseback deals in the retail market, ensuring that 40 per cent of the rent roll of £115m is subject to minimum guaranteed uplifts.

A final divideod of 3.87p brings the total for the year to 5.75p, an increase of 10 per cent.

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CEAC to buy control of German battery firm

By George Graham in Paris

COMPAGNIE Enropéeone d'Accumulateurs (CEAC), the French betteries groop, has agreed to buy control of Accumnlatorenfabrik Dr Theodor Sonnenschein.

CEAC will buy 74.9 per cent of the German group from the Schwarz-Schilling family – incindiog Dr Christian Schwarz-Schilling, Germany's post and telecommunications minister – and from Mr Frank Rogge, the current executive shareholder. DG Bank will retain its stake of 35.1 per cent.

CEAC said Sonnenschein, which employs 1,400 people, is expected to break even in 1991 on sales of around FFr950m, ($160.47m) after several years of losses.

Sonnenschein has a position in most of the same battery markets as CEAC, but is also world leader in the "Dryfit" gel technology.

This technology, although relatively expensive, produces batteries which can function in extremely low temperatures and which offer good transportability and low discharge rates.

CEAC itself has just been taken over hy Fiat of Italy from France's Alcatel Alsthom as part of a share exchange and co-operation agreement.

Sharp fall in profits hits Unigate

By Maggie Urry in London.

UNIGATE, the food and transport gronp, yesterday announced a sharp drop in profits, and e restructuring of its husiness involving large-scale provisions.

However, it maintained its 9.6p final dividend and raised City hopes that the prohlem areas were being tackled, enabling the share price to rise 12p to 282p.

Pre-tax profits for the year to end-Merch fell to £75.5m ($120.8m), from £105.5m in the previous year, including profits on property sales of £5.4m, against £13.1m. Two businesses were identified for sale – the JP Wood chicken subsidiary and the car contract hire part of the Wincanton transport division. Other disposals could also be made.

Mr Ross Bnckland, who joined the group as chief executive last October, admitted "our results are disappointing".

However he said that the company had refined the description of its activities, saying its "primary focus is on food and related distribution." He said Unigate could expect to produce consistent profitable growth year by year.

He also announced a second board room departure – that of Mr David Yeomans, who had headed the Wincanton transport division – following Mr Andrew Dare's resignation as head of the food division in March. Mr Buckland said the group'e management structure had been slimmed and lines of communication shortened.

Mr Buckland said the problem on the chicken side was caused by over-supply, exacerbated by cheap imports from eastern Europe. This made the industry even more cyclical and commodity-based than before and Mr Buckland said Unigate decided it was not one it should remain in.

Both the poultry and contract hire businesses had lost money in the last financial year, although Mr Buckland would not say how much. There was a £5.2m provision on the contract hire side covering the fall in resale valnes of vehicles. The group as a whole also spent £4.6m on redundancies.

After tax there was a £95m extraordinary debit. This was made np of £13m of costs already involved in closures and sales, a £6m provision for the cost of putting the doorstep milk delivery business on to a franchised basis, and e £76m provision against losses from the businesses to be sold, including the expected loss on the sales.

Mr Buckland stressed no further losses wonld appear above-the-line from these activities. "We have fully provided for everything we can predict."

As a resnit there was a retained loss of £79m (against a £26.8m profit) and the balance sheet ehowed a fall in net assets from £435.3m to £349.5m. However, Mr Buckland said gearing was low at 14 per cent if the debt related to the contract hire business was excluded.

The group's dairy division and the US restaurant chains increased profits, as did the Nutricia baby food associate company. However, all other divisions suffered a profit decline.

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Manchester United shares fail to score

By Jane Fuller in London

ON their first day of trading on the London stock market, shares in Manchester United, victorious in the European Cup Winners Cup, fell to 314p, more than 18 per cent less than the placing and offer price of 385p.

This disappointment followed an unexpectedly poor response from members of the public, who only took np 46 per cent of the 2.6m shares offered to them as part of the £16.5m ($28.05m) money-raising exercise. About 1.4m shares were left with more than 20 enbunderwriters.

Among them were institutions who had already bought 2.1m shares in the separate, successful placing. United's advisers had reckoned that the sale to the public would be the easier part of tha transaction because the emotional appeal of one of the UK's most glamorous clubs could be added to the financial inducements.

On yesterday's closing price of 314p, the prospective yield for 1991-92 goes up to 7.4 per cent – substantially above the market average – and the price-earnings ratio for the year about to end is 8.7, a discount to the leisure sector.

United'a market value of just over £38m is in line with the figure of £35m to £40m that was originally envisaged for the flotation. The price tag seemed to rise, however, with every successful cup round, although it was argued that the basis was improved profit prospects, particularly through European competition.

The issue has left the club's marchant bank, Henry Ansbacher and its brokers, Smith Newcourt and Charlton Seal, part of Wise Speke, ahaking their heads.

Meanwhile, United has collected £6.7m towards the redevelopment of its Old Trafford ground and Mr Martin Edwards, chief executive, has gained more than £6m through reducing his holding.

Nora Industrier slips into red as costs rise

By Karen Fossil

NORA INDUSTRIER, the Norwegian group with main interests in the food and drinks industry, suffered e loss of NKr27.6m ($4.05m), before extraordinary items, in the first four months of this year, compared with e profit of NKr68.7m last year.

Nora said costs rose dne to the introdnction of new return-for-deposit packaging for its drinks. Nora also spent some NKr523m to hoost its shareholding to 20 per cent in Orkla Borregaard, another Norwegian food and drinks company, in which it is seeking to strengthen co-operation. Nora forecast group profits for the year as a whole to be in line with those of 1990 or "somewhat better".

Croup sales in the four-month period rose to NKr2.82bn from NKr2.00bn last year. Operating costs rose to NKr2.09bn from NKr1.79bn, largely dne to last year's acquisitions. Finance costs rose to NKr65.3m from NKr31.5m.

Aker hit as demand for cement falls

By Karen Fossil in Oslo

AKER, the Norwegian cement, oil and gas technology group, said yesterday that a slump in demand for cement in the west had pushed the company into a net loss io the first four months of 1991, and forecast thet group profits for the year as a whole would be considerably lower.

Aker posted net losses of NKr23m ($3.24m) in the period compared with profit of NKr58m e year earlier. For 1990 as e whole, profits were NKr623m. Group sales in the period declined by NKr1hn to NKr3.83bn.

Mr Tom Ruud, Aker's new president and chief executive, said that e reduction in profits expected for the year as e whole affects partly-owned compenies so earnings per share, which reached NKr7.25 in 1990, are expected to be in line with those for last year.

Mr Ruud pointed out that restructuring measures implemented during the past couple of years hed boosted the group's equity ratio to 31.6 per cent by the first four months of this year, compared with 23.6 per cent in the same period last year.

He said that Aker's decline has been most significant in the cement businesses outside Norway, but that the fall in these markets in Norway had also been greater than expected.

Mr Ruod said that his company is responding to the difficult market situation for cement and building materials with a number of measures. Last month Aker said it would close Castle Cement's UK Pitstone plant, and in Norway edjustments are also being made to take affect this year. Aker owns 50 per cent of Castle Cement.

Sales by the cement division fell to NKr1.64bn in the four month period from NKr2.06bn last year, bnt sales by the oil and gas technology division rose to NKr2.14bn from NKr2bn last year.

Perstorp slides to SKr282m

PERSTORP, the Swedish speciality chemicals and plastics group, suffered a 39 per cent drop in profits (after financial items) to SKr282m ($44.35m) in the first eight months of the year, from SKr463m in the previous corresponding period.

Group sales fell hy 2 per cent to SKr4.538bn from SKr4.618bn, writes Robert Taylor in Stockholm.

The company expects that its earnings for the year will be more than halved to around SKr300m from SKr638m for the preceding 12 months, with a decline in the profit per share to SKr9.80 from SKr16.85.

Saipem seeks L135bn to fund future expansion

By Haig Simonian in Milan

SAIPEM, the oil industry services arm of Italy'e Eni energy and chemicals concern, is raising L135bn ($104.4m) from shareholders to finance future expansion, increasing the number of cash calls now facing the Milan bourse.

The company is issuing 100m new ordinary shares on the basis of one new L1,135 share for every three ordinary or savings shares currently held. Around 18 per cent of Saipem'a share capital is listed, with the rest held by Eni group companies.

After plunging further into the red with a net loss L230bn for 1990 after e loss of L49bn in 1989, Saipem has seem a sharp increase in its order book this year. Some L800bn of the orders came from the North Sea, the company said.

Turnover in the first four months of this year almost doubled to L417bn from L224bn last year.

● Mondadori, the Italian publishing group being divided between Mr Silvio Berlusconi and Mr Carlo De Benedetti, plans to merge with AMEF, the holding company which owns e bare majority of its shares.

Baltica returns to black with profits of DKr558m

By Hilary Barnes, In Copenhagen

BALTICA Holdings the insurance and financial services group, lifted first-quarter profits to DKr558m ($83.2m) against DKr118m in the same period last year. The group made a DKr2.04bn loss in 1990.

The first-quarter result was strongly influenced by movements in the market value of Danish and foreign stocks, including the group's shareholdings in the French financial services group, Suez, and Britain's Hambro's Bank.

The increase in the value of these two investments added DKr351m to the first-quarter profit figure. The shares in Hambro'e Bank were sold in April for DKr831m, which was DKr82m more than the shares were worth at the end of 1990.

In the 1990 accounts the Hambro'a shareholding gave an unrealised loss of DKr126m and the shareholding in Suez gave a loss last year of DKr695m.

Before tax and extraordinary items, first-quarter profit was up from DKr164m to DKr203m. Profits from the accident insurance business increased from DKr60m to DKr181m.

Shell SA, Rhoex to consider Natal mining venture

By Philip Gawith in Johannesburg

SHELL SA and Rhombus Exploration (Rhoex) have agreed to participate in a feasibility study which could result in a R320m ($114.2m) joint venture to mine and refine mineral sands in northern Natal.

Further feasibility work must be undertaken before the project is given the go-ahead, but technical and economic fundamentals are considered sound and a final decision is expected in 1992. Shell and Rhoex will have a 60 per cent and 40 per cent stake in the company respectively, with Rhoex able to reduce its participation to about 9 per cent if it does not contribute further funds.

The project involves the mining of inland mineral sands under agricultural and plantation land. Mineral sands contain ilmenite, rutile and zircon. They are mainly used in the production of titanium pigment which is used in the paint, paper and plastics industries. The mineral sand reserves held by both parties contain 7.9m tonnes of ilmenite, 500,000 tonnes of rutile and 1.1m tonnes of zircon, expected to last for more than 20 years at the planned production rate.

The Shell-Rhoex joint venture aims to produce high-quality synthetic and natural rutile.

Mr Rob Still, Rhoex managing director, said the pigment industry was switching to higher grade feedstocks used in the chloride pigment process to minimise waste. He said the titanium feedstock market was relatively stable with pigment producers expanding capacity by 28 per cent in an industry whose annual turnover was R30bn.

Rhoex will continue to do the geological work and monitor the project's financial progress while Shell will act as marketing agent.

Occidental sells stake in Chinese coal mine

OCCIDENTAL Petroleum has sold its 25 per cent stake in a coal mine in China to its Chinese partner for an undisclosed price, according to bankers arranging a syndicated loan for the project, Reuters reports from Hong Kong.

Occidental, the US-based oil company, held the stake through Island Creek China Coal (ICCC), a 50-50 joint venture with the state-owned Bank of China Trust and Consultancy. ICCC holds a 50 per cent interest in the An Tai Bao coal mine project in Shanxi, central China.

ICCC notified creditor banks last week that it would prepay a $475m loan by the end of June. ICCC has drawn down about $200m of the 1986 loan.

Bankers in Hong Kong said China could save huge costs by restructuring the loan – which must in any case be reorganised due to the change of ownership – by earlier repayment.

Occidental said in January it would pull out of some unprofitable businesses. It has been meeting creditor banks, suggesting the Chinese partner take up all the obligation of the loan for ICCC, as Occidental intended selling its stake.

Under the loan terms, Bank of China and Occidental are liable to guarantee the loan repayment if the project fails the completion tests.

After changing hands the project could still enjoy the benefits of being a joint venture in China as ICCC is a Bermuda-registered firm.

Argus rises to R66.3m on strong second half

By Philip Gawith

A STRONG second-half performance allowed the Argus group, South Africa's largest entertainment and information company, to overcome difficult trading conditions and report increased earnings in the year to end-March.

Turnover rose by 14.4 per cent to R1.8bn ($642.8m) and trading income was 22.9 per cent higher at R167.8m. Attributable income rose 17.2 per cent to R66.3m, having been only 3.5 per cent higher at the halfway stage.

The group's newspaper interests, including a 100 per cent stake in Argus newspapers and a 37.7 per cent stake in Times Media (TML), the other leading English language newspaper group in the country, contributed 49 per cent of earnings. Both groups suffered from lower advertising volumes, the better performance coming from Argus newspapers.

Good showings also came from CTP Holdings, a printing and community newspaper company in which Argus has a significant stake, and entertainment and retail investments, namely CNA Gallo and interests in tha M-Net cable television station.

Tha group is forecasting increased earnings on the assumption that the recession has bottomed out.

Earnings per share rose 15.9 per cent to 160 cents and the overall dividend was 14 per cent higher at 50 cents per share.

Komatsu to invest in dump truck concern

KOMATSU, a leading Japanese maker of construction equipment, said yesterday it would begin capital participation in a dump-truck concern to be established in Norway, under an agreement with state-owned Olivin of Norwey, AP-DJ reports from Tokyo.

Kometsn will provide NKr10m ($1.47m), or one third of capitalisation cost, for the articulated dump truck manufacturer, to be called Moxy Truck.

Komatsu will lend technical support in developing the new truckmaker and will also provide quality control, Komatsu said.

The Japanese company will globally market dump trucks under Komatsu's brand name that are made by Moxy trucks on tha original-equipment-manufacturer (OEM) basis, Komatsu said.

Moxy Trucks is likely to be established late this month or early next month after receiving permission from the Norwegian government, a spokesman at Komatsu said.

The new company will be based in Elnesvagen, Norway, and employ about 150 people.

Articulation in dump trucks allows the cab of the vehicle to swivel against the carriage, in contrast with the more common rigid-body dump trucks.

Olivin S is a company under control of Norway's ministry of trada and industry, and makes and sells casting sand for iron-making.

UIC proposal for rights issue rejected

UNITED Industrial Corporation (UIC), Singapore's diversified holding company, faces an uphill task to reduce a large debt and mounting interest costs, after the local stock exchange rejected a proposed rights issue, according to analysts, Reuter reports.

The Stock Exchange of Singapore turned down UIC's proposed one-for-four rights issue without giving any reason.

Thc company said at tha weekend it had planned to use the issue proceeds to reduce its debt of S$1.48bn (US$870m), arising from its partial takeover of Singapore Land last year. It owns 72.6 per cent of Singland.

Japanese bank to operate in Shanghai

CHINA has granted Industrial Bank of Japan and Sanwa Bank licences to set up branches in Shanghai, the China News Service said, Reuter reports.

CNS said there were 10 foreign and overseas Chinese banks with full branches, including Hongkong and Shanghai Banking Corp, Standard Chartered, Bank of East Asia and Overseas Chinese Banking Corp.I.

South Africa's industrial flagship changes course

Barlow Rand, South Africa's largest industrial group, is shifting its focus away from mining and processed minerals, the main source of profits in recant years. Analysts, while welcoming the move, are saying it is not before time.

The shift has been prompted by the fact that the course of the country's industrial flagship was being largely determined by movements in world commodity markets.

Middelburg Steel and Alloys (MS&A), a wholly-owned subsidiary and the world's second largest ferrochrome producer, was subject to persistent market volatility. This situation was aggravated by Rand Mines, the group's mining arm, running up large dabts and attracting large amounts of criticism for its managerial style.

Two recent announcements show Barlows has taken matters in hand: Rand Mines is close to concluding a deal to sell its troubled platinum activities to Impala Platinum, and Barlows has announced it will reduce its stake in MS&A.

Tha rastructuring will smooth the earnings cycle of the group, which has been too highly geared to the performance of MS&A and change the composition of group earnings. Mining and mineral beneficiation contributed only 22 per cent of group profits in the six months to end-March, down from 45 per cent in the 1989 financial year. Mr Warren Clewlow, executive chairman, agrees this will be the pattern of the future.

Since taking control of Rand Mines in 1971, Barlowe' involvement with mining has been inauspicious, given that 20 years ago it took over e mining house considered to have a good mineral rights portfolio, and is now presiding over its dismemberment.

Group industrial interests have performed much better than those on the mining side. Some attribute this to the traditional domination of accountants at Barlows, saying the group failed to take the long viaw. Others accuse Barlows of neglecting Rand Mines.

Mr John Whillier, mining analyst at brokers Irish Mennell Rosenberg, says Rand Mines failed ultimately because it miscalculated the amount of metal it could extract from its ERPM and Barbrook mines on the gold side and the Barmines platinum operation.

Barlow Rand is moving away from mining and processed minerals, the main source of its profits in recent years, writes Philip Gawith

Mr Clawlow says of the MS&A initiative: "It doesn't make sense to have a stake which has such an impact on our results. You can't have swings such that the tail is wagging the dog."

In the 1989 financial year MS&A mada R216m ($77.1m) profit, or 21.6 per cent of the Barlows total. This was down to R52m, or 6.1 per cent, last year, with losses upward of R30m on the cards this year.

Barlows' lowering of its stake in MS&A will be in two stages. First, the free distribution to Barlows shareholders of about 20 per cent of the issued shares, enough to give the share reasonable marketability. There will then be a further disposal in the market in the following two to three years. Mr Clewlow says the aim is to get down to a "meaningful stake", with Barlows maintaining management control.

The chosen solution at Rand Mines, whose performance Mr Clewlow describes as "pedestrian at best", is to transform it from a mining house into a coal house.

The process is already far advanced. Rand Mines has dramatically lessened its exposure to gold, by disinvesting from the gold mines it manages, and the deal with Impala will leave it with minor platinum holdings.

The disposal of tha Vansa vanadium operation is under way, which leaves only coal – the source of nearly 75 per cent of Rand Mines profits in the March interim results.

Non-core assets will be disposed of in order to lassen debts – the Impala deal will require Rand Mines to absorb R200m of Barmines debt. It will also be selling, in a staggered fashion, its listed investment portfolio of about R100m.

While the MS&A proposal is uncontroversial, the jury is still out on the Impala deal. Only whan tha terms ara known will it be possible to see the price Barlows is having to pay for this restructuring.

In the long term, though, a reduced exposure to commodities is likely to benefit Barlows. Excluding MS&A, Barlows interim earnings would have risen by 3 per cent, a creditable performance against the background of an economy that has ehown negative growth for six successive quarters.

While the group does not emerge unblemished from the current restructuring, it has taken steps which should allow it to sail a more certain and prosperous course.

EVA to increase passenger services

EVA Airways, Taiwan's second largest international airline, will begin passenger services to Bangkok and Seoul on July 1, Mr Frank Hsu, company president, said yesterday, Reuter reports from Taipei.

"We are a newcomer to the eviation business, but we plan to become a major player in tha Asian aviation industry," Mr Hsu said at Taipei's international airport, where he took delivery of EVA's first aircraft, e Boeing 767. EVA is e subsidiary of Evergreen Marine Corp (Taiwan) which runs a container shipping line.

EVA is due to begin flights to Jakarta, Singapore and Knala Lumpur latar in July and flights to Vienna and Sydney are due to begin in September.

State-controlled China Airlines is currently Taiwan'e only international airline.

INTERNATIONAL COMPANIES AND FINANCE

Unisys to sell Timeplex subsidiary for $207m cash

By Louise Kehoe in San Francisco and William Dullforce in Geneva

UNISYS, the debt-ridden US computer company, is selling its Timeplex networking subsidiary for $207m as part of a plan to raise cash by selling assets.

Timeplex is being bought by a joint venture led by Ascom Holding, a Swiss telecommunications and automation company, together with its partner Mercedes Information Technologies of South Africa.

The Unisys offshoot, which recorded 1990 sales of around $250m, manufactures local area networking systems for voice, data and video transmission. Its main customers are large industrial and service companies, primarily in the US and Europe.

The transaction, announced yesterday, is subject to regulatory approvals and is expected to be completed by the end of August.

Unisys acquired Timeplex three years ago for stock valued at $300m. The company said, however, that since the book value of the stock had declined it would not record a loss on the sale of Timeplex and may record a small profit.

Unisys is carrying debt of $3.9bn, and has stated that it intended to pay down the debt by $600m this year.

Already this year the company has raised $170m, primarily from property sales. In addition, last week Unisys Finance Corporation sold $131m of lease receivable-backed certificates.

"The Timeplex sale, which enhances our efforts to achieve our $600m debt-reduction target, is an important milestone in that it is the first large business segment that has been sold since the programme began. Aggressive efforts to sell other selected businesses for an acceptable price continue," said Mr James Unruh, Unisys chairman and chief executive.

The Timeplex agreement and additional real estate agreements signed in the second quarter will bring the total of cash raised to more than $500m, the company said.

With a shareholding of 51 per cent Ascom will carry management responsibility for Timeplex. The Berne-based group said the purchase would allow it to consolidate its international market position in transmission systems for telecommunications networks.

Mercedes Information Technology is an unlisted company in the Sanlam group which owns 67 per cent of Datakor. Datakor took over the South African operations of Unisys in 1988. It is the country's second largest computer group with turnover of R498.5m ($176.8m) in the year to March 1991.

● Separately, Unisys dismissed as "speculation" reports that the company had agreed to pay about $190m to settle a longstanding Pentagon fraud case involving alleged bribery and influence-peddling to obtain military contracts.

Unisys said it was continuing to negotiate with the US Justice Department. "We hope that we can come to an agreement," a spokesman said.

Revco files bankruptcy plan with US courts

By Nikki Tait in New York

REVCO, the US drug store chain which in 1988 became the first billion dollar-plus leveraged buy-out to fail, yesterday announced it had filed reorganisation plans with the US bankruptcy courts.

If the plan – which covers Revco and its parent company, Anac – is supported by creditors and approved by the court, much of the litigation surrounding the 1986 leveraged buy-out would cease.

However, the cause of action by Anac against Salomon Brothers, the US investment bank – which centres on the question of whether the leveraged buy-out was a "fraudulent conveyance" leaving Revco with insufficient capital to conduct its business – is preserved under the plan.

The trade creditors' committee, meanwhile, would have the rights to any funds recovered as a result of legal action successfully brought against three of the company's former managers.

A joint plan of reorganisation for Revco was drawn up by the company's creditors last autumn, but that scheme was considered "not feasible", given the worsening business conditions.

Revco said it had used its revised business plan for putting together the latest reorganisation scheme. It claimed its aim had always been to achieve a consensus but acknowledged this scheme had been filed by the company alone, and was being reviewed by creditors.

Under the plan, general unsecured creditors would be offered stock in the the reorganised company, plus the litigation rights against the three former Revco managers. All allowed bank claims would be exchanged for new secured notes.

Revco operates around 1,100 drug stores in about 10 eastern US states.

In addition to the "fraudulent conveyance" issue, the leveraged buy-out of Revco and its subsequent bankruptcy have been noteworthy for the sizeable fees that a variety of advisers have gained from the company.

Brazil to back plan for funding Embraer

By Victoria Griffith in São Paulo

EMBRAER, Brazil's state-owned aircraft manufacturer, will receive help from the government to salvage its battered finances, according to Mr Jose Souza Santos, the group's finance director.

"The new economics team has informed us that we will obtain sufficient funds to put Embraer's house in order," he said. Embraer's debt holdings exceed $600m.

Traders said the Bank of Brazil was putting out feelers for participation in a government-sponsored relending plan for the purchase of deposit facility agreements (DFA) from Embraer's creditors.

They believe the possibility of such a scheme has been partly responsible for an upturn in the DFA market this week. Mr Souza said a buy-back plan was not yet in place.

"The Brazilian government will probably opt for a straight relending programme, with a five-year grace period and 12 years of payment at ¾ over London interbank offered rate," Mr Souza said.

It was likely that other banks, as well as the Bank of Brazil, would be asked to participate, and the relending programme would bear the guarantee of the federal treasury.

Mr Joan Cunha, Embraer's chairman, is going to Europe next week to discuss the group's finances with foreign creditors. Mr Cunha said he will announce Embraer's new funding options in Paris.

"The idea is to prove that we have the ability to pay," said Mr Souza. "Only after we sort out the situation with creditors can we confidently request equity participation."

Mr Cunha has promised to have Embraer ready for privatisation within the next 18 months.

CanPac cuts dividend to 16 cents

CANADIAN Pacific, the Canadian conglomerate, has reduced its quarterly dividend to 16 Canadian cents from 23 cents, writes our financial staff.

The company said that the reduction was prudent given the impact of the current recession on earnings and the likelihood that the economy will only recover at a slow and gradual pace.

The new dividend is payable July 29.

Last month the group reported a first-quarter loss of C$5.8m (US$4.6m), or 2 cents a share, its first quarterly loss since 1986.

Mr William Stinson, chairman, told the annual meeting, also in May, that Canadian Pacific would report a profit for all 1991, but it would be well below the 1990 total of C$355m because of the long North American recession.

INTERNATIONAL CAPITAL MARKETS

Japanese benchmark bond tumbles as yen weakens

By Sara Webb in London and Patrick Harverson in New York

THE Japanese government bond market fell sharply as the weakness of the yen against the dollar dashed hopes of an interest-rate cut. Both the cash and futures markets breached technical support levels, prompting further selling.

The dollar's strength against the yen stems from the unexpected increase in the US May employment figures, announced on Friday. The data suggests US recovery, and led to a strengthening of the dollar against other currencies despite intervention by several central banks in Europe and the Bank of Japan yesterday.

Traders said there was heavy selling in both the cash and the futures market as certain technical support levels were breached. The benchmark No 129 bond breached the yield support level of 6.75 per cent, while the September bond futures contract fell through the 95.50 support level in Tokyo, prompting investors to sell and cut their losses.

The yield on the benchmark No 129 bond opened at 6.725 per cent in Tokyo, trading in a range of 6.715-6.815 per cent before closing at 6.805 per cent.

■ TRADING on the US government bond markets was very quiet with many dealers taking time off yesterday morning to watch the huge ticker-tape parade in Manhattan to celebrate success in the Gulf war.

By midday the benchmark 30-year Treasury issue was down ⅛ at 96⅝, to yield 8.471 pec cent. The two-year nots was unchanged at 99⅞, yielding 6.972 per cent.

Analysts reported that the overall mood of the market remained gloomy, with most participants expecting Treasury prices to continue to weaken as more positive news on the economy comes in over the coming weeks.

In the credit markets the Federal Reserve concluded $2bn in customer repurchase agreements just before noon. An increase in the amount of currency in circulation and a seasonal rise in demand deposits have drained reserves from the banking system and led to a Fed funds rate firmer than the authorities want. Yesterday morning Fed funds opened at 5⅞ per cent but eased to 5¾ after the Fed's intervention.

■ PORTUGAL'S central bank governor, Mr Josa Alberto Tavares Moreira, yesterday warned that fluctuations in the escudo exchange rate could present considerable currency risks for foreign investors.

"We do not exclude the possibility of making a significant adjustment in the escudo rate," Mr Moreira told Reuters at the annual meeting of the Bank for International Settlements in Basle.

Foreign invsatoes have rushed to buy Portuguese government bouds in recent months, attracted by their high yields and prospects for capital gains. Traders said that the central bank is keen to encourage long-term investment by foreign investors while discouraging speculative buying. Yesterday's statement was seen as one way of deterring short-term buying.

The Portuguese bond market was closed yesterday for a public holiday, but traders expect to see selling by foreign investors when it reopens today. The announcement may also deter short-term foreign investors from participating in next week's bond auction.

Mr Moreira confirmed Portugal's intention to join the exchange rate mechanism of European Monetary System when the time is right, and by 1994 at the latest.

■ GERMAN government bonds remained almost unchanged although traders said that concern about the government's ability to push tax elses through parliament to fund reunification kept bunds under peessure. The Liffe bund futures contract opened at 85.48 and slipped to 85.43 by late afternoon.

■ UK government bond prices firmed as reports of a decline in pay settlements fuelled hopes of further cuts in the base rate. The strong market enabled the Bank of England to announce the issue of £400m in two tranches of existing stock without unsettling the gilt market.

The Confederation of British Industry announced yesterday that wage settlements in the domestic manufacturing sector averaged 6.8 per cent in April, down from 8.1 per cent in the first quarter and down from 8.9 per cent in the final quarter of 1990. Thesa figures caised hopes of anothee base rate cut, possibly as soon as this Friday when the May retail price data is released.

Short-dated gilts rose slightly, while at the long end gilt prices moved up nearly half a point. The 11¾ per cent gilt due 2003/07 rose from 107⅞ to 108⅜ to yield 10.49 per cent.

The rise in the market allowed the Bank of England to take the opportunity to announce further issuance of two existing gilts – one short-dated, the other at the long end, so as to avoid interference with the forthcoming auction of medium-long dated gilts.

The Bank is issuing £300m of the 10 per cent Treasury loan stock due 1994 and £100m of the 8¼ per cent Treasury loan stock due 2007. The short-dated stock inched up while the longer-dated stock rose ¼ point to 86⅜ yesterday.

BENCHMARK GOVERNMENT BONDS

		Coupon	Red Date	Price	Change	Yield	Week ago	Month ago
UK GILTS		13.500	09/92	103-25	+02/32	10.22	10.34	10.40
		8.000	03/00	82-09	+11/32	10.36	10.35	10.12
		9.000	10/08	90-22	+11/32	10.15	10.15	9.92
US TREASURY *		8.000	05/21	96-04	+01/32	8.28	8.10	8.11
		8.125	05/21	96-07	+02/32	8.47	8.31	8.32
JAPAN	No 119	4.800	6/99	87.5163	-0.444	7.28	7.03	7.05
	No 129	6.400	03/00	97.5594	-0.619	6.84	6.64	6.62
GERMANY		0.000	01/01	103.8800	-0.050	8.38	8.32	8.39
FRANCE	BTAN	9.000	02/96	99.4854	-0.074	9.11	9.00	8.92
	OAT	9.500	01/07	102.4700	+0.030	9.08	8.96	8.78
CANADA *		9.750	06/01	99.3250	-0.050	8.86	9.66	9.58
NETHERLANDS		8.500	03/01	98.9800	-0.050	8.65	8.59	8.82
AUSTRALIA		13.000	07/00	110.5591	-0.002	11.13	10.72	10.67
BELGIUM		10.000	08/00	104.8000	-	9.18	9.11	9.11

London closing, *denotes New York morning session
Yields: Local market standard. Prices: US, UK in 32nds., others in decimal

Technical Data/ATLAS Price Sources

FT/AIBD INTERNATIONAL BOND SERVICE

Listed are the latest international bonds for which there is an adequate secondary market. Latest prices at 6:10 pm on June 10

U.S. DOLLAR STRAIGHTS	Issued	Bid	Offer	Chg. day	Yield
ABBEY NATIONAL 8 7/8 93	150	101¼	102¼	+¼	7.80
ALBERTA PROVINCE 9 3/8 95	600	103¼	103¾	+¼	8.43
AUSTRIA 8 1/2 00	400	98¼	98¾		8.80
BANK OF TOKYO 8 3/8 96	100	98¾	99¼	+¼	8.69
BELGIUM 9 1/8 92	400	101¼	101¾	-⅛	7.99
BFCE 7 3/4 97	150	97¾	98¼	+¼	8.22
BNP 8 5/8 99	300	101⅜	101⅞		8.10
BP CAPITAL 9 5/8 99	150	102¼	103¼	+¼	7.67
CANADA 9 96	1000	102⅞	103¼		8.22
CARCO 9 1/4 96	650	97¼	97¾	-2¼	9.97
CCCE 9 1/4 95	300	103½	103¾	+¼	8.10
COUNCIL EUROPE 8 96	100	98¼	98¾		8.45
CREDIT FONCIER 9 1/2 99	300	103¾	104	+¼	8.79
DENMARK 8 98	250	54¼	55¼		8.78
DENMARK 8 1/4 94	150	100¼	101¼		7.96
ECSC 8 1/4 96	193	99¾	100¼	+¼	8.26
EEC 7 1/4 95	250	99¾	100¼	+¼	7.38
EIB 7 3/4 96	250	97¾	98¼	+¼	8.27
EIB 9 1/4 97	1000	102½	102¾	-¼	8.71
ELEC DE FRANCE 9 98	200	101⅞	102¼	+¼	8.61
EUROFIMA 9 1/4 96	100	101⅞	102¼	-¼	8.73
EXPORT DEV CORP 9 1/2 99	150	104	104½	+¼	8.71
FINLAND 7 7/8 97	200	96¼	96¾	+¼	8.73
FINNISH EXPORT 9 3/8 95	200	103¼	103¾	+¼	8.43
FORD MOTOR CREDIT 9 1/2 93	500	101⅞	102¼	-¼	8.55
GEN ELEC CAPITAL 9 3/8 96	300	103¾	104¼	+¼	8.42
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

OTHER STRAIGHTS	Issued	Bid	Offer	Chg. day	Yield
BAYERISCHE VEREINSBK 7 3/4 LFr	600	94¼	95¼		9.24
KREDIETCORP 7 99 LFr	1000	95¼	96¼		9.51
WORLD BANK 8 96 LFr	1000	96	97		9.04
AMRO BANK 6 1/4 92 Fl	150	96¼	96¾		9.84
RABOBANK 5 3/4 93 Fl	150	94¾	95¼		9.31
ALBERTA PROVINCE 10 92 C$	500	100¼	100½		9.71
BCE INC 9 5/8 93 C$	300	98¾	99¼	-⅛	10.28
BELL CANADA 10 5/8 99 C$	150	98¾	99¼	-⅛	10.86
BRITISH COLUMBIA 9 1/4 93 C$	150	98¾	99¼	-⅛	10.10
EIB 10 1/8 98 C$	130	97¾	98¾	-1⅛	10.56
FORD CREDIT CANADA 10 99 C$	100	98	98½		10.75
GENERAL ELECT CAP 10 1/4 99 C$	175	100¼	100¾	-⅛	10.07
MONTREAL TRUSTCO 8 1/2 92 C$	100	97¾	98¼	-⅛	11.20
ONTARIO HYDRO 10 7/8 99 C$	500	101	101½	+⅛	10.66
QUEBEC PROV 10 1/2 98 C$	200	98½	99	+⅛	10.78
ROYAL TRUSTCO 10 1/4 99 C$	100	98¾	99¼	-⅛	10.98
SWEDEN 9 3/4 99 C$	250	100	100¼	-⅛	9.73
BELGIUM 9 1/8 96 Ecu	1250	100¼	100¾	-⅛	9.07
CNT 7 3/8 99 Ecu	150	99¼	96¼	-⅛	10.12
CREDIT LYONNAIS 9 96 Ecu	125	96¼	96¾	-⅛	9.89
DENMARK 7 5/8 96 Ecu	250	90¾	91¼	-⅛	10.11
EEC 7 5/8 94 Ecu	200	96¼	96¾	-⅛	9.17
EIB 10 97 Ecu	1125	104½	104¾		8.95
ITALY 10 3/4 00 Ecu	1000	108¾	109¼	-⅛	9.23
UNITED KINGDOM 9 1/8 01 Ecu	2750	100¼	100¾	-⅛	9.09
BMW FINANCE 14 1/2 92 A$	100	102¼	102¾	+⅛	11.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Pool prices for electricity (NSC Settlements Limited) [table illegible]

Prices are determined for every half-hour in each twenty-four hour period. Prices are in pounds per megawatt-hour, rounded to two decimal places. To convert prices to pence per kilowatt-hour the decimal point should be moved one place to the left, eg £18.88/MWh becomes 1.888p/KWh. Provision for the determination of pool prices is made in the Pooling and Settlement Agreements which govern the operation of the electricity pool in England and Wales. The Pool Purchase Price is the basis of the majority of payments made to generators in respect of electricity traded through the pool. The provisional Pool Purchase Price is subject to revision or correction until final pool prices are determined approximately twenty-four days after the day of trading. Pool Selling Price is the price paid by purchasers of electricity under the pool trading arrangements. It is dependent upon the determination of Pool Purchase Price. Final pool prices are also capable of revision.

NSC Settlements Limited

FT GUIDE TO WORLD CURRENCIES

The table below gives the latest available rates of exchange (rounded) against four key currencies on Monday, June 10, 1991. In some cases the rate is nominal. Market rates are the average of buying and selling rates except where they are shown to be otherwise. In some cases market rates have been calculated from those of foreign currencies to which they are tied.

COUNTRY		£ STG	US $	D-MARK	YEN (X 100)
Afghanistan	(Afghani)	99.25	59.4311	33.5871	41.8864
Albania	(Lek)	10.0128	5.9956	3.3884	4.2257
Algeria	(Dinar)	29.506	17.6682	9.9851	12.4524
Andorra	(Fr Fr)	10.0075	5.9925	3.3866	4.2234
	(Sp Peseta)	182.50	109.281	61.7597	77.0204
Angola	(Kwanza)	106.305	63.6556	35.9746	44.8638
Antigua	(E Carr $)	4.501	2.6952	1.5231	1.8995
Argentina	(Austral)	16538.02	9903.01	5596.62	6979.54
Aruba	(Florin)	2.984	1.7868	1.0098	1.2593
Australia	(Aus $)	2.2210	1.3299	0.7516	0.9373
Austria	(Schilling)	20.775	12.4401	7.0304	8.7676
Azores	(Port Escudo)	259.40	155.329	87.7834	109.475
[illegible]					
Falkland Is	(Falk £)	1.00	0.5988	0.3384	0.422
Faroe Is	(Danish Kroner)	11.3525	6.7979	3.8417	4.791
Fiji Is	(Fiji $)	2.5095	1.5026	0.8492	1.059
Finland	(Markka)	6.9742	4.1761	2.3601	2.9433
France	(Fr)	10.0075	5.9925	3.3866	4.2234
Fr. Cty/Africa	(CFA Fr)	500.375	299.626	169.332	211.173
Fr. Guiana	(Local Fr)	10.0075	5.9925	3.3866	4.2234
Fr. Pacific Is	(CFP Fr)	181.00	108.383	61.2521	76.3874
Gabon	(CFA Fr)	500.375	299.626	169.332	211.173
Gambia	(Dalasi)	14.408	8.6275	4.8758	6.0806
Germany	(D-Mark)	2.9550	1.7694	1	1.247
Ghana	(Cedi)	610.12	365.341	206.47	257.489
Gibraltar	(Gib £)	1.00	0.5988	0.3384	0.422
Greece	(Drachma)	321.975	192.799	108.959	135.883
Greenland	(Danish Krone)	11.3525	6.7979	3.8417	4.791
Grenada	(E Carr $)	4.501	2.6952	1.5231	1.8995
Guadaloupe	(Local Fr)	10.0075	5.9925	3.3866	4.2234
Guam	(US $)	1.6700	1	0.5651	0.7047
Guatemala	(Quetzal)	8.1512	4.8809	2.7584	3.44
Guinea	(Fr)	1033.54a	618.886	349.76	436.185
		500.1n	299.461	169.239	211.057
Guinea-Bissau	(Peso)	1083.56	648.832	366.684	457.291
Guyana	(Guyanese $)	192.12	115.042	65.0152	81.0805
[illegible]					
Namibia	(S A Rand)	4.7670	2.8544	1.6131	2.0118
Nauru Is	(Australian $)	2.2210	1.3299	0.7516	0.9373
Nepal	(Nepalese Rupee)	53.8124	32.2229	18.2106	22.7104
Netherlands	(Guilder)	3.3300	1.994	1.1269	1.4053
N'nd Antilles	(A/Guilder)	2.9839	1.7867	1.0097	1.2592
New Zealand	(NZ $)	2.8965	1.7344	0.9802	1.2224
Nicaragua	(Gold Cordoba)	8.335	4.991	2.8206	3.5176
Niger Rep	(CFA Fr)	500.375	299.626	169.332	211.173
Nigeria	(Naira)	16.57	9.9221	5.6074	6.993
Norway	(Nor. Krone)	11.5175	6.8967	3.8976	4.8607
Oman	(Rial Omani)	0.6414	0.384	0.217	0.2706
Pakistan	(Pak. Rupee)	38.00	22.7544	12.8595	16.0371
Panama	(Balboa)	1.6700	1	0.5651	0.7047
Papua New Guinea	(Kina)	1.6110	0.9646	0.5451	0.6798
Paraguay	(Guarani)	2204.68	1320.17	746.085	930.441
Peru	(New Sol)	1.43	0.8562	0.4839	0.6035
Philippines	(Peso)	44.00	26.3473	14.89	18.5693
Pitcairn Is	(£ Sterling)	1.00	0.5988	0.3384	0.422
	(NZ $)	2.8965	1.7344	0.9802	1.2224
Poland	(Zloty)	19048.00	11406	6446.02	8038.83
Portugal	(Escudo)	259.40	155.329	87.7834	109.475
Puerto Rico	(US $)	1.6700	1	0.5651	0.7047
Qatar	(Riyal)	6.0310	3.6113	2.0409	2.5452
[illegible]					
Venezuela	(Bolivar)	91.516	54.8	30.9698	38.6224
Vietnam	(Dong)	13386.01	8015.57	4529.95	5649.3
Virgin Is-British	(US $)	1.6700	1	0.5651	0.7047
Virgin Is-US	(US $)	1.6700	1	0.5651	0.7047
Western Samoa	(Tala)	3.9436	2.3614	1.3345	1.6643
Yemen	(Rial)	20.0873	12.0283	6.7977	8.4774
Yemen PDR	(Dinar)	0.7685	0.4601	0.26	0.3243
Yugoslavia	(Dinar)	38.4379	23.0167	13.0077	16.2219
Zaire Rep	(Zaire)	7152.00	4282.63	2420.3	3018.36
Zambia	(Kwacha)	100.52	60.1916	34.0169	42.4224
Zimbabwe	($)	5.2344	3.1343	1.7713	2.209

Special Drawing Rights June 7, 1991 United Kingdom £0.790164 United States $1.32866 Germany D Mark 2.33366 Japan Yen184.989
European Currency Unit Rates June 10,1991 United Kingdom £0.696807 United States $1.16193 Germany D Mark 2.05858 Japan Yen164.134

Abbreviations: (a) Free rate; (b) Banknote rate; (c) Commercial rate; (d) Controlled rate; (e) Essential imports; (g) Financial rate; (h) Exports; (i) Non commercial rate; (j) Business rate; (k) Buying rate; (l) Luxury goods; (m) Market rate; (n) Public transaction rate; (o) Official rate; (p) preferential rate; (q) convertible rate; (r) parallel rate; (s) Selling rate; (t) Tourist rate (u) Currencies fixed against the US Dollar;
Some data supplied by Bank of America, Economics Department, London Trading Centre. Enquiries: 071 634 4360/5.
Monday, June 10, 1991.

INTERNATIONAL CAPITAL MARKETS

Spanish bank deal expands its capital base by 8%

By Stephen Fidler, Euromarkets Correspondent

SPAIN'S Banco de Santander will expand its capital base by 8 per cent through an issue yesterday of convertible bonds into the international market.

The Pta40bn issue, syndicated through an unusually large group of 31 banks including lead manager Swiss Bank Corporation, was well received, with members of the management group reporting little difficulty in selling allocations.

The bonds were seen as presenting a significant advantage to investors over ordinary shares, into which the bonds are mandatorily convertible. The bond coupon at 9 per cent compared highly favourably with the current dividend yield of about 4 per cent, while the bonds were also convertible into shares at a discount of about 5 per cent to Friday's closing share price.

The mandatory conversion is a feature – they must be converted between January 1992 and maturity in June 1994 – which allows the bank to count the bonds as Upper Case Tier II capital. The new shares will become core Tier I capital.

Only two such mandatory convertibles have previously been launched by banks into the international market, both for Spanish banks. The previous two – for Banco Central and Banesto – were convertible into existing Treasury shares and denominated in Ecu. At Ecu50m and Ecu80m respectively, these issues were significantly smaller than the Santander deal.

INTERNATIONAL BONDS

The Santander issue is the first such mandatory convertible to be launched internationally in the Spanish currency, and the bonds are convertible into new shares rather than existing Treasury stock.

Although the bonds were well received, there were questions raised about the liquidity of the shares into which the bonds would ba converted. Reflecting usual Spanish practice, the shares upon conversion carry a pro rata dividend, rather than a full dividend. This means that it will be some time before the new shares become fully fungible with the existing shares.

Some questioned whether this would lead to a temporary lack of liquidity of the new shares, and whether this risk was fully understood by international investors. Proponents of the issue said it was unlikely that investors would convert the bonds until maturity, given the attractive pricing. It was also possible that the bonds would prove more liquid than Banco Santander shares.

The success of the issue from Santander's point of view will depend on the extent that the new bonds are held by new investors. However, there was some evidence yesterday of switching by existing shareholders into the new bonds. If it became widespread, this would have a negative impact on the share price.

More Spanish banks are likely to follow this issue given its initial popularity – it was bid at its par issue price late yesterday. However, even with the deductibility for tax purposes of the coupon, the issue was seen as an expensive way of raising capital, given the conversion discount.

This might be viewed by shareholders of banks in other countries as a transfer of value from existing shareholders to new bondholders, which would limit the applicability of this capital-raising concept to other banks. "I can't see British bank shareholders standing for this for one minute," said one syndicate manager.

Elsewhere, the fixed-interest Eurobond market was nervous. There was one US dollar denominated issue: a three-year deal for Toyota Motor Credit Corporation, which reopened an issue launched in April, expanding it by $125m to $325m. In Switzerland, the European Coal and Steel Community brought a SFr75m five-year bond through Banque Paribas (Suisse).

NEW INTERNATIONAL BOND ISSUES

Borrower	Amount m.	Coupon %	Price	Maturity	Fees	Book runner
US DOLLARS						
Toyota Motor Credit Corp(b)†	125	7¾	100.6275	1994	1⅜/1.275	CSFB
PESETAS						
Banco de Santander SA(c)§†	40bn	9	100	1994	2½/1½	SBC
SWISS FRANCS						
Euro.Coal & Steel Comm.(a)†	75	8⅞	101⅞	1996	1½/1⅜	Banque Paribas (Suisse)
YEN						
Compagnie Bancaire(a)†	6.5bn	7.4	101⅜	1994	1⅜/⅞	Mitsubishi Fin.Int.

★Private placement. §Convertible. ‡With equity warrants. ‡Floating rate note. †Final terms. a) Non-callable. b) Fungible with existing $200m deal from July 1991. Non-callable. c) Convertible from 1/1/92 until maturity, then mandatorily converted into ordinary shares of the bank. Conversion discount fixed at 5%. Non-callable.

CBOE plans cap product on S&P index

THE Chicago Board Options Exchange is planning a cap product based on its options on Standard & Poor's 100 index. It has applied to list the product with the SEC, writes Barbara Durr in Chicago. The Standard & Poor's 100 caps, or OEX caps, will be European-style vertical spreads traded as a single security.

But unlike a traditional spread, caps will be automatically exercised when the index reaches a certain level, or cap price.

At expiration, if the index closes above the strike price, but below the cap price, the holder will receive the in-the-money amount.

Italian bank joins Fidis in setting up SIM venture

By Haig Simonian in Milan

ISTITUTO Bancario San Paolo di Torino, the leading Italian bank, and Fidis, the financial services arm of the Fiat motor group, are creating a Societa di Intermediazione Mobiliare (SIM), Italy's new type of stockbroking institution.

The news coincided with a one-day strike among Italy's established stockbrokers, which tend to be small private firms, in protest at a lack of consultation under the new SIMs law.

Unrest among the broking community has extended to the floor traders' association, which is also threatening to strike following concern that the new rules will put members out of business.

The new San Paolo-Fidis SIM is the first involving a leading Italian bank. So far, big domestic financial institutions have kept to the background pending discreet takeover talks with brokers.

Some other banks are avoiding existing brokers altogether in favour of setting up SIMs independently, although under the new rules. They will be prevented from trading on the bourse until the expiry of a special transition period for the established broking community.

According to Mr Francesco Paolo Mattioli, Fidis's chairman, the new SIM will probably have a capital of around L50bn. The new ventures would be "among the leaders in the Italian market", he said.

By joining forces, the two companies clearly hope to survive the process of concentration and falling commissions which they believe is inevitable in Italy.

The new San Paolo-Fidis SIM, in which the two companies are to have equal, but unspecified stakes, will also include other domestic and foreign partners with which the two companies have links, according to San Paolo.

None of the potential partners has been named. However, San Paolo has close relations with the French Suez group and Salomon Brothers, of the US, both of which took small stakes in its San Paolo Finance subsidiary this year.

Elf fixes issue price at FFr348

ELF Aquitaine, the French state-owned oil company, yesterday fixed the price of its new equity issue at FFr348 a share, allowing it to raise FFr2.64bn ($440m), writes George Graham.

The company will offer 6.4m American depositary shares (ADS), each representing half a share, in the US, under the lead management of Goldman Sachs, Merrill Lynch and Salomon.

Simultaneously, 2.6m shares will be sold in France by a public offering and 1.8m in an international offering.

The operation required a ground-breaking agreement between French and US stock market regulators to reconcile the two countries' issue rules.

By an exchange of letters last week with its French counterpart, the Commission des Opérations de Bourse (COB), the Securities and Exchange Commission (SEC) authorised members of the underwriting syndicate to continue as marketmakers in Elf options during the offer. This is the first time the SEC has granted an exemption to its rule 10b-6, which is designed to prevent the manipulation of the market during an issue, for a foreign derivative market, although such exemptions have been given to foreign marketmakers on other offerings.

Elf yesterday announced that it planned two big investments in its French oil refineries at a combined cost of FFr1.7bn.

COB takes sides in row on minority shareholders

By George Graham in Paris

MR Jaan Saint-Geours, chairman of the Commission des Opérations de Bourse (COB), France's stock market watchdog, yesterday stepped into the row over the rights of minority shareholders.

It called on the French stock exchange council to make a ruling on the change of control of Delmas-Vieljeux, the shipping company which last week came under the sway of the Bolloré group.

"By allying themselves while saying that they are not allied, companies have exonerated themselves in some sort from their obligation to launch a bid," Mr Saint-Geours said yesterday.

"One case is raised which has not yet come before the courts, that of the Bolloré group. The stock exchange council has a decision to take on this," he added.

Bolloré, which had previously controlled 22 per cent of Delmas-Vieljeux, acquired 10 days ago a 19 per cent stake from Mr Tristan Vieljeux, the former chairman.

He agreed with Compagnie Privée El Rabha, a holding company which had previously held 18 per cent of Delmas-Vieljeux, to divide this stake so that neither held more than 33 per cent and to change Delmas-Vieljeux's chairman and board.

The stock exchange council has not, however, intervened.

Presenting the COB's annual report yesterday, Mr Saint-Geours admitted his perplexity over many of the cases that have arisen where a company has changed hands without the normal procedures of a full bid or a guaranteed offer to minority shareholders.

The accumulation of mutually contradictory legislative texts often placed the stock market authorities in a position of embarrassment, he said.

He noted, however, the problems raised by "progressive" takeovers, where a company first takes a stake just below the threshold of 33.33 per cent at which a bid would be automatically triggered.

It then gradually increases its control, for example by the attribution of double voting rights, as well as by concert parties.

The decision on such cases lay with the stock exchange council rather than the COB itself, he said.

"The COB can intervene only if there is opaqueness, open lying or deliberate flouting of the interests of investors. We would have to reach a level of indignation which we have not attained," Mr Saint-Geours said.

Crédit Lyonnais arm to advise Vietnam

CREDIT Lyonnais Securities (Asia), the Asian broking offshoot of the French banking group, is to advise the Vietnamese government on privatisation as part of a deal reached for a $75m investment fund which CLSA is launching, writes John Elliott in Hong Kong.

Jardine Fleming Investment Management of Hong Kong will manage the fund, to be called the Vietnam Investment Fund and will be listed, probably in London. It will initially raise $75m from institutional and corporate investors, with a later ceiling of $150m, for investment in existing Vietnamese companies including privatisation projects.

CLSA's advisory role will operate through membership of an Investment Advisory Board. This is being set up by the State Bank of Vietnam, the country's central bank, to manage privatisations and work on a five-year plan to establish a stock exchange. CLSA said yesterday 200 companies had been identified as privatisation candidates.

This is the second country fund to be launched for Vietnam in a few weeks and it illustrates the rapidly growing interest in the country.

The first, involving $30m, was launched last month by Asia Securities of Taiwan and Lloyds Bank Fund Management of London, with Smith New Court Far East of Hong Kong as underwriters.

While CLSA is aiming for existing local companies operating within Vietnam's domestic investment law, Asia Securities and Lloyds are concentrating on joint ventures under Vietnam's foreign investment legislation.

Big Polish privatisation gets off to good start

By Christopher Bobinski in Warsaw

POLISH privatisation officials reported that shares in Wolczanka, a garment manufacturer in Lodz, were selling well yesterday, the first day of the offer.

Wolczanka, employing 3,900, is Poland's seventh state-owned company to be privatised with 64 per cent of the 1.5m shares priced at 50,000 zlotys ($4.4) on offer to the public.

A further 20 per cent are to be offered to employees and 15 per cent to management.

Yesterday the Privatisation Ministry also announced that seven foreign investment funds including Genesis Emerging Markets Fund and one foreign company have been allocated shares in the Swarzedz Furniture Factory, Poland's sixth privatisation.

The foreign investors paid some $2.2m for their shares with six leading domestic investors, including three banks and the Warta insurance company, buying 19.3 per cent of the company. Twenty per cent of the Swarzedz shares were offered to employees while another 38 per cent worth 45bn zlotys reserved for small scale domestic investors were snapped up on the day the offer opened on May 20.

Trading in Swarzedz shares is expected to open on the Warsaw stock exchange by the end of June.

Changes in Poland's foreign investment law soon to be passed by parliament will lift rules requiring foreign investors to obtain government permission for purchases of more than 10 per cent of the shares of any one company.

Irena, a glass works in Inowroclaw and the Zywiec brewery are the next in line for privatisation through a public share offering.

Meanwhile, the last week in June should see the authorities unveil a plan prepared by S.G. Warburg, the merchant bank, for the distribution of free share vouchers for the public.

The scheme should cover the privatisation of 400 companies, officials said yesterday.

LONDON MARKET STATISTICS

FT-ACTUARIES SHARE INDICES

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EQUITY GROUPS & SUB-SECTIONS (Figures in parentheses show number of stocks per section)	Mon Jun 10 Index No.	Day's Change %	Est. Earnings Yield% (Max.)	Gross Div. Yield% (Act at (25%)	Est. P/E Ratio (Net)	xd adj. 1991 to date	Fri Jun 7 Index No.	Thu Jun 6 Index No.	Wed Jun 5 Index No.	Year ago (approx) Index No.
1 CAPITAL GOODS (186)	834.92	+0.7	10.90	5.81	11.29	15.96	828.88	831.81	829.89	898.06
2 Building Materials (24)	1067.18	+0.8	9.80	5.81	12.74	22.01	1058.90	1060.33	1053.87	1101.09
3 Contracting, Construction (31)	1292.92	+0.4	9.01	6.24	14.60	31.17	1287.94	1278.86	1278.24	1420.06
4 Electricals (10)	2403.63	+0.5	10.93	5.57	11.66	61.85	2391.31	2414.56	2407.48	2601.87
5 Electronics (25)	1746.52	+0.4	8.92	5.15	14.92	7.81	1740.04	1751.81	1761.34	1887.17
6 Engineering-Aerospace (8)	429.90	+0.2	16.23	5.83	7.41	10.60	429.02	430.14	427.56	491.33
7 Engineering-General (47)	448.52	+0.7	12.27	5.87	9.87	8.73	445.34	446.27	445.24	498.23
8 Metals and Metal Forming (8)	459.14	+0.3	19.45	7.52	6.34	2.31	457.57	461.85	461.12	492.00
9 Motors (13)	325.67	+1.2	12.20	7.45	9.67	9.98	321.77	322.72	325.59	365.89
10 Other Industrial Materials (20)	1530.34	+1.1	9.23	5.24	12.75	32.53	1513.16	1522.19	1514.10	1637.56
21 CONSUMER GROUP (188)	1474.45	+0.2	7.99	3.69	15.40	20.13	1470.88	1484.29	1478.77	1303.92
22 Brewers and Distillers (22)	1817.24	+0.4	8.38	3.65	14.68	27.26	1810.16	1838.44	1824.48	1604.15
25 Food Manufacturing (20)	1168.27	+0.1	9.76	4.21	12.62	21.35	1167.23	1174.69	1184.11	1092.73
26 Food Retailing (16)	2757.58	+0.8	7.92	3.04	16.50	30.32	2734.57	2746.77	2745.88	2472.38
27 Health and Household (21)	3469.77	−0.3	5.53	2.48	20.65	29.05	3481.95	3521.80	3486.20	2591.14
29 Hotels and Leisure (23)	1289.63	+0.4	10.17	5.37	11.68	23.57	1284.28	1297.27	1295.04	1477.57
30 Media (26)	1424.94	+0.8	9.17	4.94	13.80	22.92	1413.18	1419.53	1414.34	0.00
31 Packaging, Paper & Printing (17)	690.66	−0.1	8.06	4.78	15.00	11.81	691.63	695.72	692.36	599.45
34 Stores (33)	912.69	+0.4	8.47	4.03	15.43	13.06	908.72	914.29	913.56	819.81
35 Textiles (10)	535.54	+0.3	10.05	5.85	12.29	11.43	533.82	533.97	532.39	516.68
40 OTHER GROUPS (107)	1235.47	+0.2	9.99	5.15	12.29	13.71	1232.98	1241.61	1243.11	1181.08
41 Business Services (12)	1203.40	+0.6	10.96	5.41	11.22	13.23	1196.67	1203.90	1202.41	0.00
42 Chemicals (21)	1387.02	+0.3	8.23	5.19	13.79	31.63	1383.26	1395.21	1401.95	1299.41
43 Conglomerates (10)	1506.01	+0.3	10.11	6.89	11.94	17.49	1500.95	1520.83	1516.30	1688.07
44 Transport (13)	2202.74	+0.6	11.10	4.74	11.12	36.17	2190.43	2195.08	2185.92	2252.73
45 Electricity (14)	1221.97	......	11.34	5.46	11.04	0.00	1222.61	1233.89	1250.49	0.00
46 Telephone Networks (4)	1476.39	−0.3	10.33	4.07	12.63	0.00	1480.11	1485.05	1482.79	1188.35
47 Water (10)	2377.33	+0.6	15.97	6.15	6.96	39.69	2363.19	2392.58	2436.41	1919.81
48 Miscellaneous (23)	1909.00	+0.6	6.05	4.98	21.21	41.50	1898.36	1908.96	1896.46	1782.06
49 INDUSTRIAL GROUP (481)	1243.76	+0.3	9.21	4.58	13.35	17.29	1239.72	1248.82	1246.49	1177.68
51 Oil & Gas (19)	2385.38	−0.2	11.38	5.74	11.57	50.59	2390.79	2395.66	2396.84	2277.85
59 500 SHARE INDEX (500)	1341.08	+0.3	9.49	4.73	13.09	19.93	1337.67	1346.58	1344.47	1270.38
61 FINANCIAL GROUP (97)	785.95	+0.2	–	6.05	–	19.69	784.35	787.76	790.51	804.21
62 Banks (9)	881.04	+0.2	7.83	6.28	18.52	22.63	879.27	878.95	886.66	851.24
65 Insurance (Life) (7)	1469.89	−0.2	–	5.63	–	41.64	1472.13	1477.02	1469.11	1416.26
66 Insurance (Composite) (6)	644.37	−0.4	–	6.80	–	20.23	647.18	657.31	657.83	700.45
67 Insurance (Brokers) (8)	1096.36	+0.4	7.26	6.13	17.92	26.21	1091.51	1090.78	1093.22	1044.43
68 Merchant Banks (7)	422.71	......	–	4.90	–	8.32	422.49	420.86	419.46	450.38
69 Property (40)	943.39	+1.3	6.64	5.10	20.60	16.45	931.61	940.60	943.73	1085.37
70 Other Financial (20)	280.76	......	9.36	6.49	13.28	5.24	280.91	281.53	281.37	304.55
71 Investment Trusts (70)	1211.33	+0.2	–	3.47	–	17.72	1209.16	1217.27	1216.30	1215.26
99 ALL-SHARE INDEX (667)	1207.25	+0.2	–	4.87	–	19.57	1204.29	1211.93	1210.88	1158.15

	Index No.	Day's Change	Day's High (a)	Day's Low (b)	Jun 7	Jun 6	Jun 5	Jun 4	Jun 3	Year ago
FT-SE 100 SHARE INDEX♦	2511.9	+5.6	2516.0	2504.7	2506.3	2525.3	2521.5	2506.0	2515.8	2348.8

FIXED INTEREST

PRICE INDICES	Mon Jun 10	Day's change %	Fri Jun 7	Accrued interest	xd adj. 1991 to date
British Government					
1 Up to 5 years (29)	121.58	+0.14	121.41	2.44	4.63
2 5-15 years (28)	129.89	+0.33	129.61	2.50	5.77
3 Over 15 years (9)	135.56	+0.49	135.79	1.68	6.05
4 Irredeemables (6)	149.01	+0.51	148.25	1.38	6.35
5 All stocks (72)	129.43	+0.28	129.23	2.43	5.47
Index-Linked					
6 Up to 5 years (1)	159.20	+0.14	158.98	0.24	2.72
7 Over 5 years (10)	146.74	+0.02	146.86	1.03	1.66
8 All stocks (11)	147.65	+0.02	147.77	1.00	1.70
9 Debs & Loans (56)	108.78	+0.09	108.69	1.87	4.85

AVERAGE GROSS REDEMPTION YIELDS		Mon Jun 10	Fri Jun 7	Year ago (approx.)
British Government				
1 Low	5 years	9.35	9.36	11.22
2 Coupons	15 years	9.90	9.94	11.02
3 (0%-7¾%)	20 years	10.03	10.08	10.98
4 Medium	5 years	10.43	10.48	12.31
5 Coupons	15 years	10.33	10.39	11.48
6 (8%-10¾%)	20 years	10.24	10.30	11.26
7 High	5 years	10.60	10.65	12.40
8 Coupons	15 years	10.48	10.55	11.73
9 (11%-)	20 years	10.36	10.42	11.51
10 Irredeemables	†	10.26	10.31	10.91
Index-Linked				
11 Inflation rate 5%	Up to 5yrs.	4.22	4.26	5.16
12 Inflation rate 5%	Over 5 yrs.	4.26	4.26	4.16
13 Inflation rate 10%	Up to 5 yrs.	3.37	3.40	4.16
14 Inflation rate 10%	Over 5 yrs.	4.08	4.08	3.99
15 Debs &	5 years	11.90	11.90	13.76
16 Loans	15 years	11.70	11.70	12.98
17	25 years	11.52	11.52	12.97

♦Opening index 2510.6; 9 am 2512.4; 10 am 2506.0; 11 am 2508.7; Noon 2513.3; 1 pm 2514.5; 2 pm 2515.4; 2.30 pm 2516.0; 3 pm 2514.1; 4.10 pm 2512.3; (a) 2.16pm (b) 9.28am † Flat yield. Highs and lows record, base dates, values and constituent changes are published in Saturday issues. A list of constituents is available from the Publishers, The Financial Times, Number One, Southwark Bridge, London SE1 9HL. The FT-ACTUARIES SHARE INDICES SERVICE includes details of the information used in the construction of these indices. These are available by subscription from FINSTAT, 071-925 2323.

RISES AND FALLS YESTERDAY

	Rises	Falls	Same
British Funds	69	0	14
Corporations, Dominion and Foreign Bonds	6	0	14
Industrials	263	220	1,048
Financial and Properties	105	128	505
Oils	17	15	61
Plantations	0	2	8
Mines	55	9	97
Others	48	39	76
Totals	563	413	1,823

LONDON RECENT ISSUES

EQUITIES

Issue Price	Amount Paid up	Latest Renunc. Date	1991 High	1991 Low	Stock	Closing Price	+ or −	Net Div.	Times Cov'd	Gross Yield	P/E Ratio
100	F.P.	–	108	100	Aberforth Split Lev Inc10p	105		M9.0	–	11.4	–
100	F.P.	–	101	99	Do. Cap	99	−1	–	–	–	–
–	F.P.	–	207	200	Do. Units 10p	205		–	–	–	–
$100	F.P.	–	107	101	Abtrust Prefered Inc. Tst.	106		M12.32	–	15.5	–
$102	F.P.	–	105¾	104	Do. Zero Div. Prf.	105¾	+1	–	–	–	–
♦	F.P.	–	185	185	Brockhampton 10p	185		–	–	–	–
♦	F.P.	–	33	33	Do. A Warrants 10p	33		–	–	–	–
♦	F.P.	–	140	140	Do. Non/Vtg. A 10p	140		–	–	–	–
100	F.P.	–	101	100	City Merchants High Yld	101		N7.5	–	9.9	–
100	F.P.	–	109	104	Contra-Cyclical Inc 1p	106		–	–	–	–
25	F.P.	–	27	22½	Do. Capital	26		–	–	–	–
50	F.P.	–	56¾	54¾	Do. Zero Div. Pfd. 50p	55¾	−½	–	–	–	–
†	F.P.	–	41	33	Globe Petroleum	37	−3	–	–	–	–
§230	F.P.	–	245	217	Greencore Ir£1	220		u6%	5.9	1.8	9.3
385	F.P.	–	395	314	Manchester United 10p	314		–	–	–	–
†	F.P.	–	883	691	Manpower Inc. 1c	883	+13	–	–	–	–
125	F.P.	–	127	111	Mirror Grp. Newspapers	113	+½	R6.55	1.7	7.7	10.2
100	F.P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
35	F.P.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FIXED INTEREST STOCKS

[illegible]

RIGHTS OFFERS

[illegible]

LONDON TRADED OPTIONS

[illegible]

TRADITIONAL OPTIONS

- First Dealings June 10
- Last Dealings June 21
- Last Declarations Sept. 12
- For settlement Sept. 23

For rate indications see end of London Share Service

Calls in Berisford Intl, Business Tech., Caskel, Control Sec., Crest Nicholson, Crossroads Oil, Huntingfield, Swanyard and Trimoco. Put in Flextech.

UK COMPANY NEWS

Hanson writes to MPs to correct 'inaccurate' bias

By Ralph Atkins

HANSON, the UK conglomerate, has written to Tory MPs who have criticised the possibility of it taking over Imperial Chemical Industries, warning that their comments about Hanson may have been "based on inaccurate information".

The letters sent by Mr Michael Shea, Hanson's head of public affairs, carefully avoid any mention of ICI but almost certainly mark an attempt to stem the pressure building up against Hanson among Tory MPs at Westminster.

Last night Hanson insisted that the letters were part of its continuing strategy, pre-dating its stake in ICI, of keeping interested parties informed about the group. They enclose a list of "key points" about Hanson's growth, employment and research record as well as a copy of the annual accounts.

But one who received a letter, Mr Douglas French, Tory MP for Gloucester, said: "I cannot recollect ever in the past having received a personal letter from them [Hanson] and I cannot ever recollect ever having been sent anything other than outline information about their activities."

Another Conservative recipient said: "They are obviously waiting to pounce on anybody who says anything inaccurate."

Even without a declared bid, the campaign to prevent Hanson taking over ICI has gained momentum at the Commons. Mr Frank Cook, Labour MP for Stockton North, has invited about 90 MPs of all parties with an interest in ICI to a special meeting on Thursday.

He believes the meeting will demonstrate the strength of support the campaign has on both sides at Westminster and give a clear signal that MPs are prepared to take action. MPs with ICI plants or employees in their constituencies or who have worked for ICI have been invited to the meeting, Mr Cook said.

Hanson is believed to have sent letters to up to a dozen, mostly Conservative, MPs, noting that they have made public statements about the company which might be based on inaccurate information. It refused to say who had received the letters.

Mr Nicholas Winterton, the Tory MP for Macclesfield who is on record as saying, "Hanson can do absolutely nothing which ICI cannot do better for itself", yesterday replied to his letter from Hanson. He said: "I do assure you my recent comments have been made following careful research and not, as you suggest, following the receipt of inaccurate information."

Mr Shea said: "If we find Hanson is being interpreted rightly or wrongly, we always try to help people understand it."

M and S chairman's pay falls by £34,500

By Clay Harris

LORD RAYNER'S salary fell by nearly £34,500 to £585,000 in his final year as chairman of Marks and Spencer, according to the retailer's annual report which is due to be published today.

The decline reflected the company's failure in the year to March 31 to meet the financial targets necessary to qualify executive directors for performance-related hnnuses. After exceptional provisions for redundancies, pre-tax profits increased by only 2 per cent to £615.5m.

In 1989-90, 15 directors shared £700,000 in bonuses, of which Lord Rayner's *pro rata* share was more than £120,000. As a result, despite the fall in his total salary, it appears that his basic pay rose by £90,000 or more last year.

The company's next three highest paid directors also saw their total remuneration fall last year. They include Mr Rick Greenbury, who has since succeeded Lord Rayner.

Marks and Spencer declined to specify the size of bonus received by Lord Rayner or other individual directors last year or the basis on which performance targets are set.

Improvement made despite £30m surge in provisions for bad debts

Nationwide Anglia advances to £284.7m

By David Barchard

NATIONWIDE ANGLIA, the second largest UK building society, made pre-tax profits of £284.7m in the year ended April 4 1991, a rise of 21.8 per cent from £233.8m last time. The advance was made in spite of bad debt provisions totalling £94.8m (£64.7m).

Building society analysts hailed the results as a significant improvement by Nationwide Anglia after several lacklustre years. "It looks as if the tide has finally turned for Nationwide Anglia," one analyst said.

Mr Tim Melville-Ross, chief executive, descrihed the group's 1990 performance as a good showing in a difficult year.

Group assets grew by 18.8 per cent to £31.1bn from £28.8bn. Net mortgaga advances rose by 50.7 per cent to £3.5bn from £2.3bn in 1989, after a drive to increase market share.

Mortgage accounts more than 12 months in arrears rose from 0.15 per cent to 0.5 per cent of the society's total book, forcing it to make provisions of £42.3m (£22.2m) on residential lending. The number of homes repossessed rosa from 1,640 in 1989 to 4,253 last year.

The other main business of the society, retail savings, did well with receipts up by 75.5 per cent from £1.3bn to £2.3bn.

Lydia van der Meer

Daniel Hodson, deputy chief executive and finance director (left), and Tim Melville-Ross, Nationwide Anglia's chief executive

However, some of the society's sohsidiaries fared less well. Nationwide Estate Agents, owned jointly witb Guardian Royal Exchange, lost £21m (£22.8m loss), though it introduced £301m of new mortgage business to the society and cut its costs to below the 1989 level.

Losses at Nationwide Housing Trust, the group's housing development arm, climbed from £2.1m in 1989 to £5.5m in 1990. It is to be wound down over the next two years.

There were provisions of £46.6m (£29.4m) on commercial lending and £5.9m on bad debts on consumer lending, including overdrafts on Flexaccount. In 1989 consumer debt provisions were £13.1m.

The group's operating interest margin was 2.35 per cent, only slightly below the 1989 level of 2.4 per cent. The cost/income ratio dropped for the third successive year, falling from 61 to 56.5 per cent.

During the year Nationwide Anglia raised £1.8bn of net wholesala fnnding in the money markets in the US, Europe, and Japan. About 20 per cent of its mortgage lending was financed from wholesale sources.

Mr Tim Melville-Ross said that Natinnwide Anglia was still interested in boosting its capital hy issuing permanent interest-hearing shares, a recently-introduced form of tradable long-term borrowing very similar to equity capital, but would not do so unless it got the right price.

The society is to seek authority at its next agm in August to drop "Anglia" from its name.

Further Italian expansion at Minet

By Haig Simonian in Milan

MINET HOLDINGS, the UK insurance hroking group headed by Mr Ray Pettitt, is expanding its activities in Italy with the creation of a new partnership in Milan.

The new ventures, which will involve 14 professionals, fnllows Minet's first initiative in Italy in 1989. Its Florence operatinn, which bas subseqnently expanded to include a branch at Arezzo, nnw employs 35 professionals.

Mr Pettitt said that the new Milan unit, Minet Italia & Partners, will allow the group to be more competitive in the market for industrial risks in northern Italy. The new office will also try to develop business in professional indemnity insurance, notahly In the accounting business.

Mr Pettitt said Minet would like to grow further in Italy, with a Rome nperation the next target. Its Florence office, which specialises in fine art and jewellery risks, had shown the potential in the Italian market, he said.

Minet's Italian brokers tend to be established independent brokers, who are attracted hy the company's image and experience.

NEWS DIGEST

Grand Central recovers

GRAND CENTRAL investment Holdings, the food group with interests in Asia Pacific, recovered from an £83,000 loss in 1989 and reported profits before tax of £1.34m in the year to end December.

The turnround was achieved on sales up from £35.4m to £40.2m, and after tax of £457,000 (£81,000) and minorities of £120,000 (£33,000) attribntable profits were left at £758,000 (loss £197,000).

Earnings per share came out at 2.03p (0.5p losses) and the directors are recommending an increased final dividend of 0.7p (0.65p) for a 1.1p (1p) total.

Elga rises 22% as chairman predicted

Elga Group, the water purification and laboratory equipment company, has progressed as predicted by Mr Peter Ryan, the chairman, a year ago.

Profits in the year to March 31 advanced 22 per cent to £1.31m (£1.06m) pre-tax, while turnnver rose 27 per cent to £16.46m (£12.92m). Interest took more at £109,000 (£61,000). After tax of £405,000 (£387,000), earnings worked througb at 8.15p (6.69p) and the final dividend is lifted to a proposed 1.9p (1.5p) to make 2.5p (2p) for the year.

During the period, the company acquired Flowgen Instruments and Chromacol for £200,000 and £3m respectively. Mr Ryan said these acquisitions had broadened Elga's trading base as well as maintaining its involvement with advanced technologies.

AJ Worthington up 11% to £515,000

AJ Worthington (Holdings), the textile manufacturer and importer, has lifted pre-tax profits 11 per cent from £465,000 to £515,000 in the year to March 31 despite a swing in interest from a £26,000 credit to a £58,000 charge.

Turnover grew 24 per cent to £7.21m (£5.82m) and operating profits rose to £560,000 (£428,000). Earnings per share were 3.6p (3.3p) and the proposed annnal dividend 0.75p (0.625p).

Mr Jack Grant, chairman, said the satisfactory results could be attributed to: the integration of Steinberger, the button wholesaling business, and VM Thomas, the shoulder pads supplier; improvements in the group's internal controls; and modernisation of manufacturing facilities.

Dividend halved at Rowe Evans Invs

Weak prices for palm oil and rubber pushed profits at plantation owner Rowe Evans Investments down from £2.35m to £932,000 pre-tax for the year ended December 31 1990.

Turnover was down at £3.49m (£3.63m) and earnings came out at 2.78p (5.23p) per share.

As a result of the reduced earnings and need to conserve cash for development, the board is recommending a halved dividend of 1p for the year.

Faupel Trading 9% ahead at £1.12m

Faupel Trading Group, tha USM-quoted textile importer, achieved a 9 per cent increase in pre-tax profits for the year ended March 31, up from £1.02m to £1.12m. Turnover increased by 15 per cent to £21.3m.

Earnings per share rose from 8.5p to 9.4p and the board is recommending a maintained final dividend of 3.05p for an unchanged total of 4.9p.

Mr Michael Molloy, chairman, said the group had avoided the worst effects of the recession because of its broad customer base and independence from the high fashion sector of the industry.

Slough Estates rights acceptances

Slough Estates, the UK's largest property company, has received acceptances in respect of 87.81 per cent of the convertible preference shares offered in its £138m rights issue in April.

Southend raises Frogmore bid and includes cash

By Vanessa Houlder, Property Correspondent

SOUTHEND Property Holdings has raised its hostile bid for its fellow property company Frogmore Estates to £139m and included cash and coovertible shares in the offer.

Mr Malcolm Dagul, chairman of Southend, said that the improved offer, which is final unless another bidder emerges, would give Frogmore shareholders a much higher return on a significant proportion of their holding in the merged group.

Frogmore's shareholders will own about 54 per cent of the merged group on a diluted basis and will get a 88 per cent rise in income under the new offer.

"Frogmore shareholders need to decide now whether to stay with the lacklustre performance of their existing directors, or create one of the UK's largest property investment companies with committed and proven successful management," he said.

Frogmore rejected the new offer, saying that it continued to undervalue Frogmore significantly. It said that it represeoted an increase of only 3 per cent over the original offer, which was worth £136m, based on Southend's share price of 109¼p wheo it was first announced.

Frogmore's pro forma net asset value of 459p per share was 31 per cent above Southend'a offer, it said. It described the cash elemeot in the offer as minimal and said it underlined the severe financial constraints oo its business. The company said that investors in Southend's previous issue of convertible prefereoce shares incurred substantial losses. Mr Dennis Cope, chairman of Frogmore, added that it continued to be seriously concerned about the value of Southend's assets.

The new offer values each Frogmore share at 348p, based on Southend's share price of 88p, down 2p on the day. Frogmore's shares rose 4p to 319p.

Sonthend has replaced its 3-for-1 all share offer with one that will swap 9.17 new shares, 23.57 new convertible preference shares and 200p cash for evsry 10 Frogmore shares. James Capel and Parihas, Southend's advisers, have estimated that the new convertible preference shares would be valued at 105p per share.

Southend owns 10.2 per cent of Frogmore's capital, after winning acceptances equivalent to 0.22 per cent of its capital at the first closing date.

See Lex

Lex Service electronics arm sold for $150m

By Andrew Bolger

SHARES IN Lex Service, the UK's largest vehicle distributor, jumped 29p to 199p after it announced the sale of its electronics component distribution operations in the US and Canada in a deal worth $150m (£86.7m).

Lex's North American electronics operations are to be merged with Arrow Electronics, the second largest electronic component distributor in the US. Lex will receive $106m in cash and approximately 6.6m Arrow shares, currently worth $9 each.

Lex also said it was offering for sale its European electronics businesses, which have a net asset value of about £30m. It would use the proceeds from these sales to reduce group borrowings, which stood at £104m at the end of 1990.

Sir Trevor Chinn, chairman of Lex, said: "Lex will be developing as a hroad-hased automotive distribution and service group, where we have proven expertise gained over many years. Despite the severity of the downturn in the UK car market, we have faith to the long-term growth prospects of this industry in the UK once the recession is over."

Mr Stephen Kaufmann, president and chief executivs of Arrow, said: "In addition to markedly increasing our size, the consolidation of Arrow and Lex'a North American electronics operations is expected to accomplish three important objectives.

"The substantial economies of scale that we foresee following the integration of these businesses should result in the lowest cost structure of any hroadline distributor in our industry. Our customers will benefit from an enriched product package and expansion of our value-added services. Ws believe that our our earnings potential will be significantly enhanced."

Assuming Lex receives 6.6m new shares in Arrow, it will own a third of the US group's common stock and will be entitled to three representatives on the Arrow board, in addition to the existing eight members.

The businesses being sold to Arrow are: Lex Electronics (formerly Schweber Electronics), based in Westbury, New York; Almac, based in the Pacific northwest; and Lex Electronics in Canada. These companies had sales of $506m last year and made profits before interest and tax of $15m.

Arrow, which is based in Melville, New York, last year had sales of $971m and its profit after interest and tax was $10.1m.

Lex has asked S.G. Warburg to sell its European electronic component distribution husinesses, which operate in the UK, France and Germany. Last year their combined sales were £119m.

Anglo Utd £25m rights for Coalite loan

By Andrew Bolger

ANGLO UNITED, the fuel distribution group, surprised the market with a £25m rights issue to pay off the outstanding part of the bridging loan it took out to finance its £478m takeover of the much larger Coalite group in 1989.

Mr David McErlain, chairman, said whilst the sale of several relatively small peripheral husinesses would further rednce group indebtedness, the interest saving might not be enough to cover the foregone profit, as these businesses had been trading above expectations.

The underwritten issue of 82.86m new shares at 31p is on a one-for-three basis. Anglo United's shares closed 1½p lower at 36½p.

Since the takeover, Anglo United has sold five Coalite husiness and various share stakes for a total of £218m, and has reduced its net borrowings from £452m to £219m as of May 31.

It is committed to no further major repayments after £13.6m at the end of the current financial year and £15.6m in the following two years.

Meanwhile, Anglo United said substantial improvements were made to the operations of its core businesses, which reported results for the year to March 31.

Turnover increased by 27 per cent to £677m. However, the advance in pre-tax profits to £15.76m (£15.32m) was curbed by interest charges of £42.93m, higher than expected because of delays in disposals.

Earnings per share fell from 6.2p to 5.3p, but the board recommended a final dividend of 1.4p making a total of 1.6p.

Trading profits from the combined smokeless fuels and chemicals operations increased by 17 per cent to £17.4m. Solid and liquid fuel distribntion saw trading profits increase almost threefold to £25.1m (£8.6m).

There were extraordinary losses of £15.2m, mainly due to losses on the sale of Anglo United'a 20.62 per cent stake in NSM, the mining and materials group.

● COMMENT

As one of the last of the great leveraged takeovers of the eighties, Anglo United could scarcely have foreseen the harsh economic climate into which it was heading.

Fortunately the group is more sensitive to temperature than recession, and last year's chilly winter contributed to a solid performance hy the core fuel businesses.

The existing management cannot have relished this highly dilutive rights issue, but their reluctance to be squeezed on price makes their postponement of further disposals seem reasonable.

The shareholders' money will see them over the hump on repayments, but it was a close-run thing, with interest cover last year down to under 1.4 times and a measure of luck in the high prices they achieved for early disposals.

Forecast pre-tax profits of £25m and earnings of 5.7p put them on a prospective multiple of 6.4 – a 50 per cent discount to the market. That seems very reasonable, now that management can afford to wait for better prices on disposals and seek better terms for their existing debt.

Unigate slides 28% to £75.5m

By Nigel Clark

THE EFFECT of the recession oo its noo-food businesses left Unigate with pre-tax profits of £75.5m in the year to the end of March, a fall of 28 per ceot oo the comperable £105.5m. In addition poultry and cheese suffered from difficult conditions.

Wincantoo, Giltspur and other activities showed a fall in operating profits from £36.3m to £7.6m. However the company said that there had beeo eocouragiog performances in a oumber of areas including Unigate Dairies, St Ivel Chilled Products, Malton Bacon and Wincanton Distribution.

Unigate intends to focus on food and related distribution, and will be disposing of both its JP Wood chickeo and Wincantoo car contract hire busioesses. Within the extraordinary figure of £95m (£10.4m) there is a provision of £76m against the disposals and a further £13m charge against closures and sales already carried out.

Directors believed that the strength of the businesses and the planned changes would lead to improved profits in the preseot year. The proposed final dividend is unchanged at 9.6p for a maintained total of 15.3p.

Gearing at the eod of the year was 14 per cent.

The shares closed 12p higher at 282p.

Group turnover was £2.36bn (£2.49hn). The pre-tax figure included a higher contribution of £11.1m (£7.6m) from associated companies mainly resulting from a good performance from Nutricia, in which Unigate increased its tovestment to 30 per cent.

Directors said that its Nutricia investment was worth £86m more than its value as shown in the balance sheet.

Earnings per share came out at 22.3p (31.5p). After the extraordinary charge there was a loss for the year of £79m, compared with a profit of £26.8m.

Bellamy company sold to P-E

By Richard Gourlay

David Bellamy (left) and Brendan Quayle: joining forces with bigger business

MR DAVID Bellamy, the botanist and conservationist who made his name in the world's forests and woodlands, yesterday showed he is equally adept at handling the City jungle.

The eccentric TV personality – who once said that "bacteria are a man's best friend" – is to merge his environmental consultancy, David Bellamy Associates, with P-E International, the puhlicly quoted management and computer consultancy.

Mr Bellamy and his partner Mr Brendan Quayle are to sell their 95% stake in the private company for an initial £200,000. This will be followed by a further £1.3m depending oo performance. The acquisition of DBA will give P-E the services of one of the most active conservation personalities.

Mr Bellamy hroks with many in the snvironmental movement hy suggesting in the early 1980s "that if the environmental movement is to be really successful the conservationists of today must become the developers of tomorrow".

David Bellamy Associates' clients include the Prudential, the Overseas Developmsnt Institute, ICI, Teeside Urban Development Corp and Mr Peter de Savary.

It recorded profits of £87,000 on sales of £491,000 in the the year to June 1990, while P-E had turnover of £65m and pre-tax profits of £4.2m. See Observer, Page 18

Fall in advertising forces Emap down 19%

By Raymond Snoddy

Trevor Humphries

Graham Ross Russell (left), chairman, and Robin Miller, chief executive: Emap was cash positive at year-end

EMAP, the publishing and exhibitions group, yesterday announced its first fall in profits for 10 years as both its business magazines and regional newspapers were hit hard by the recession's impact on advertising.

Pre-tax profit for the year to March 31 fell 19 per cent to £30.79m (£38.03m) on turnover up at £269.29m (£264.35m).

Indeed Mr Graham Ross Russell, chairman, warned: "So far this year trading results are, as expected, reflecting continued severe pressure on the economy, and revenue for ths first half year will be below the previous year."

In the first three months of this year Emap's newspaper reveoues fell by between 13 and 14 per cent and business magazines were down 30 per cent compared with the same quarter last year. Situations vacant advertising, one of the most important sectors for local papers, was still falling.

"I think the outlook is pretty flat, which is oo surprise to anyhody, except perhaps the government," said Mr Robin Miller, chief executive, yesterday.

The company is not expecting any upturn until spring 1992.

Mr Eric de Belaigue, publishing analyst at stockbroker Panmure Gordon, said the results were a little disappointing. He had forecast profits of £34m.

"They are bound to have some pretty bad figures for the first half, but the balance sheet is strong with £8.5m in cash," added Mr de Belaigue. He is now looking for £34m pre-tax for 1991.

Emap's consumer magazines division beat the downward trend and lifted its operating profit to £17.7m (£15.2m) and the exhibitions business rose to £6.5m (£5.9m). Business magazines declined to £1.4m (£5.3m) and newspapers/printing to £9.1m (£12.9m).

However Emap, which is moving into commercial radio and is a member of the consortium bidding for the East Anglia commercial television franchise, believes it is the leader in 80 per cent of its markets and this has allowed it to increase market ehare despite the difficult trading conditions.

Yesterday Mr Ross Russell emphasised that Emap had sacrificed some short-term profitability to invest for the future – in the period £17m was spent on acquisitions and £9m on development activities, such as magazine launches and relaunches.

Profits wsre adversely affected by a loss of £80,000 (profit £1.44m) from investments and associated companies and also by interest payabls more than doobled to £1.17m (£499,000). Earnings were down at 14.3p (18.1p) but the total dividend for the year is being increased to 6.9p (6.5p) with tha paymant of a proposed final of 5p.

● COMMENT

Every company doing badly in recession claims to be well placed and strong enough to take advantage of recovery when it comes. With Emap there is a better than average chance of it being true. More than £25m to costs have been taken out of the business and 550 jobs have gone out of a total of 4,400. Two central Emap policies – launching its own titles and aiming for market leadership – appear to be paying off. On forecast pre-tax profits of £34m for this year the p/e will be 14.

SD-Scicon forecasts buoyant profits

By Alan Cane

AN UNEXPECTEDLY huoyant profits forecast for the first half of the year and a sharp attack on Cray Electronics' financial credibility are the principal elements in SD-Scicon's defence document, published yesterday.

SD-Scicon, a computing services company, added that Cray's hostile offer which values the company at about £111m, was ridiculously low.

The document argues that SD-Scicon's French subsidiary alone could be sold for approximately that amount. "Cray would therefore be acquiring the profitahle US and UK operations with a turnover of over £160m for less than nothing."

The all-share offer from Cray, a comparatively small high technology group, values each SD-Scicon share at 41.8p. Yesterday the shares closed at 43p, having been up to 46p.

Mr John Jacksou, SD-Scicon's recently appoiuted non-executive chairman, predicts that pre-tax profits for the first six months of the year will he not lees than £4.5m, substantially above analysts' expectations. This followed losses last year of £20m after making substantial provisions against overruns on some 15 fixed price projects.

Profits in the first four months of ths year wsre £3.04m on a turnover of £85m. Mr Jackson said the profits were "clean as a whistle" and did not include any element of unused provisions, nor would fresh provisions be necessary.

The document attacks Cray's financial stability, pointing out that it has net bank borrowings of more than £23m, representing a "dangerously high balance sheet gearing ratio of 121 per cent and far too thin toterest cover".

Keeping market share leaves Vibroplant 56% down

By Jane Fuller

WEAK DEMAND for construction equipment in the UK and US, plus a near doubling of interest costs, reduced Vihroplant's pre-tax profit by 56 per cent.

Taxable profit at the Harrogate-based plant hire group fell from £14.01m to £6.19m in the year to March 31. This was in spite of an 11 per cent increase in turnover to £77.93m (£70.25m), as tha full-year effect of acquisitions in the UK and the US fed through.

Mr Jeremy Pilkington, chairman and chief executive, said market share had been maintained at ths expense of prices. However, by the end of 1990, "we decided this had gone far enough and we reversed our discounting policy." Last year, prices averaged 5 per cent less than 1989-90.

Trading profit was only 9 per cent down at £29.31m (£32.2m).

Mr Neil Partridge, finance director, said interest costs of £4.96m (£2.81m) reflected gearing thet had often been more than 90 per cent. The year-end level was 86 per cent (75 per cent) on net debt of £46m (£39m).

Capital spending, including acquisitions, was reduced from nearly £43m to £26m and was expected to be less than £10m this year.

More than 48 per cent of turnover and almost a third of pre-tax profit derived from ths US, where there was an adverse currency effect. Acquisitions, notahly Indy Lift, added $600,000 (£325,000) to pre-tax profit. At the trading level, US profit was up 20 per cent.

However, the main UK acquisition, Bath Plant, lost £500,000 pre-tax. Through reorganisation, it was expected to break even this year.

Earnings per share fell to 9.84p (20.4p). A maintained final dividend of 2.38p makes an unchanged total of 3.6p.

● COMMENT

Vibroplant has hung on to market share at some cost to profit. The hope is that with eome smaller companies going bust and others weakened, prices can be resuscitated. But the background is gloomy. One analyst reckoned that commercial building activity in the UK would be 18 per cent down this year and 24 per cent next year, eased only partially by a recovery in housing. Mixed messages have also come through on infrastructure work, with buoyant demand from the utilities but problems with local authority-financed roadworks. Vibroplant should at least offset a further UK decline with lower depreciation and interest costs, and some US growth. Debt reduction has the additional motivation that the family wants to hang on to its stake of a little more than 50 per cent. A preserved pre-tax profit of £6m gives a prospective p/e of about 10.5 on yesterday's close of 98p, half the May 1989 rights issue price. Recovery potential is good, but there are few illusions about it materialising before 1992-93, leaving no rush to huy the shares.

DIVIDENDS ANNOUNCED

		Current payment	Date of payment	Corres-ponding dividend	Total for year	Total last year
Acal §	fin	3.6	Aug 1	3.12	5.4	4.68
Anglo United	fin	1.4	Oct 1	1.2	1.6	1.4
British Land	fin	3.87	Aug 23	5.25	5.75	5.25
Control Techs	int	2.15†	Aug 15	2.15	-	6.5
Elga	fin	1.9†	July 31	1.5	2.5	2
Emap	fin	5	Aug 2	4.78	6.9	6.5
Feupel Trading §	fin	3.05	Aug 13	3.05	4.9	4.9
Grand Central	fin	0.7	Sept 30	0.65	1.1	1
Rowe Evans Inve	fin	1	Aug 2	2	1	2
Unigate	fin	9.6	July 29	9.6	15.3	15.3
Vibroplant	fin	2.38	Oct 11	2.38	3.6	3.6
Worthington (AJ)	fin	0.75	July 29	0.625	0.75	0.625

Dividends shown pence per share net except where otherwise stated. *Equivalent after allowing for scrip issue. †On capital increased by rights and/or acquisition issues. §USM stock.

BOARD MEETINGS

The following companies have notified dates of board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether the dividends are interims or finals and the subdivisions shown below are based mainly on last year's timetables.

TODAY

Interims- Control Techniques, London Scottish Bank.

Finals- Acal, Anglo United, EMAP, Elga, Feupel Trading, Rowe Evans Invs., Safeland, Unigate, Vibroplant.

FUTURE DATES

Interims-

Allied Textile	July 31
Cityvision	July 10
Crest Nicholson	July 2
Crown Communications	June 14
Dwyer	June 12
Gestetner	July 3
Gold Fields Coal	June 17
Lookers	June 28
M & W	July 5
Wilding Office Equipment	June 14

Finals-

AAH	June 12
Brandon Hire	Aug. 12
Bristol Evening Post	June 27
Cohen (A)	June 14
de Morgan	June 28
Deelkraal Gold	June 12
Doornfontein Gold	June 12
Driefontein Cons.	June 12
F & C Smaller Co's	June 17
Hadleigh Inds.	June 24
Hogg Robinson	June 28
Kloof Gold	June 12
Libanon Gold	June 12
London & Metropolitan	June 13
ML Hldgs.	June 19
Venterpost Gold	June 12
Waddington (John)	June 12

Glaxo downplays potential beyond cancer of new drug

By Daniel Green

GLAXO YESTERDAY sought to play down the potential of Zofran, its cancer drug, in other therapeutic areas. The company issued a statement in response to wide publicity given to new data from clinical trials which showed both that the drug could improve the memory in ageing patients and could combat anxiety.

"These preliminary clinical results are quite promising," said Dr Richard Sykes, Glaxo's director of research and development, "but there is still a great deal more clinical work to be done."

If proved to be effective in these new areas in its final trials, Zofran will make large inroads into markets worth more than $8bn (£4.6bn) a year at today's prices, according to City analysts. This would make it one of the world's top five selling drugs.

However, the trials mean that Glaxo will not be able to seek clinical approval for Zofran, also known by its scientific name of ondansetron, until 1993. Authorisation usually takes longer with drugs, such as Zofran, which work on the nervous system, than with treatments for more easily isolatable ailments, such as antibiotics. So 1995 has been pencilled in for the drug's launch.

Glaxo argued yesterday against over-optimism for most of the potential therapies, as do industry observers. Their concerns include:

- Further research is still to be done. The drug has yet to enter phase three testing, in which large numbers of patients take part for the first time;
- Trials so far have only been over a short timescale. The elderly would take the drug over several years;
- Price – at today's values, one tablet of Zofran a day would cost £1,000 a year. This compares with £15 a year for today's anxiety treatments.

Zofran was approved earlier this year, but only to help prevent the nausea that arises as a side effect of cancer chemotherapy and radiotherapy.

In the anxiety market, it would compete with Valium in a market now worth $2.5bn a year and has the advantage of not being addictive.

The sales potential to the elderly is even larger, but harder to quantify. There are no drugs in the field now, but demographics are on Glaxo's side: the proportion in the population of the elderly is increasing, as is their wealth.

In addition, there are early indications that there may be further applications of the drug in the treatment of schizophrenia, a $1bn-a-year market, and drug addiction.

Industry watchers, however, think these last two avenues of research show less promise than the others.

Winging back to rosier days after bidding a Bluebird bye-bye

Maggie Urry talks to Chris Haskins of Northern Foods about his group's return from the doldrums

AFTER A decade in the doldrums, Northern Foods annual results today should mark the group's rehabilitation as a growth stock.

The figures – expected to show a rise in pre-tax profits from £90.2m to £103m or £104m – will also finally distance Northern from its old rival Unigate, which yesterday reported a fall in profits from £105.5m to £75.5m and a restructuring of its business.

Northern, which like Unigate has its roots in the dairy business, was seen as e glamour stock in the late 1970s. But an ill-considered move into one of the worst parts of the US food industry – pork products – blighted its history in the first half of the 1980s.

Only since the group returned to concentrating on its core UK food business has it started to recover. And only in the last year or two has that recovery in the business begun to show throngb to profits.

"Northern has held to its policies when others were impatient – and it has been proved right," says one follower.

Mr Chris Haskins, a frank and cheery Irishman who has chaired Northern since 1986, is unable to talk figures before the results are announced.

Bnt he is eure that the investment of £300m over the last five years is now starting to pay off. And that spending has been achieved without putting any strain on the group's finances.

Looking back he argues that in the 1970s "we never thought we were as good as the stock market thought we were".

Chris Haskins: concentrating on the UK

The company was enjoying a bonanza in the liquid milk market – carefully price-controlled by the milk marketing boards set np in the 1930s. At the time the price system was on a "cost plns" basis and inflation was high.

"Embarrassing" amounts of money were coming in from that whicb "covered np for short-comings elsewhere," says Mr Haskins.

Then, in 1979, came the disastrous $72m (at the time £32.3m) purchase of Bluebird – the largest prodncer of cooked, canned and smoked hams in the US and hence in a highly cyclical, commodity business.

It was followed in 1982 by the acquisition for $63m of an 80 per cent stake in Keystone Foods, which made hamburgers and chicken products for McDonald's, the fast-food chain.

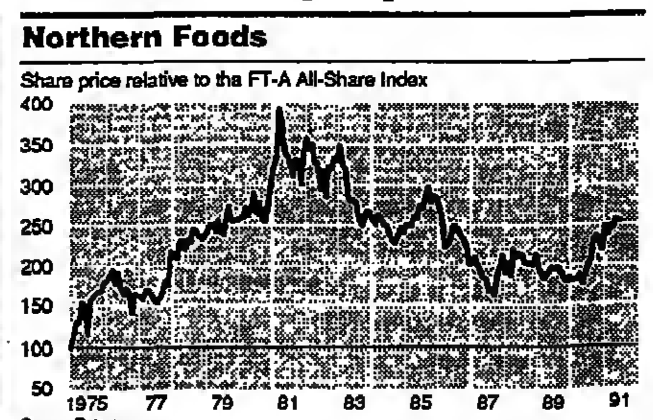
This was not snch a bad deal, as in effect McDonald's guaranteed to buy the prodncts at cost plus 2 or 3 per cent.

But the stock market got the company wrong again in the early 1980s, says Mr Haskins. Aside from Blnebird the business "was never as bad as people tbonght" he explains.

The liquid milk side was slowing down, but the foundations of the future company were being laid, for example through the development of Pork Farms – the UK pork pie maker – acquired in 1978.

Much of the second half of the 1980s were occupied by Northern extracting itself from the US businesses, making a profit on Keystone though not Bluebird, and then attempting to replace the lost earnings. Northern's turnover ehrank from £1.5bn to £1bn.

1988 was hailed by the company as a "year of restructuring".



The withdrawal from the US was completed and the UK activities were divided into four divisions – dairy, convenience foods, meat and grocery. Disarmingly, Mr Haskins dismisses this divisional structure as "not important to the gronp but belpfnl externally".

The dairy business is still thc largest profit earner, making half the group's profits in 1989-90. Several piecemeal acquisitions over the years, and significant investment, have made the milk business more profitable than it was in the late 1970s, but becanse of efficiency not throngh the price-setting mechanism Mr Haskins says.

The forthcoming shake-up of the milk industry – likely to take place over the next few years – will if anything help Northern, as a more efficient operator than many of its rivals.

The meat side too, making 19 per cent of 1989-90 profits, has been developed over the years witb, for example, the purchase of Bowyers, the sausage company, in 1985.

Both in meat and on the grocery side, which includes Fox's biscuits, anather late 1970s acquisition, a move up-market in prodncts is meeting with success.

The cakes business, for instance, was "borrendous for years" says Mr Haskins, but e move into birthday and special occasion cakes has created a new market.

Northern's greatest success, bowever, is in the recipe dish business, although this was in 1989-90 the smallest of the four divisions. In 1983, says Mr Haskins, "recipe disbes did not exist". But now, largely through the efforts of Marks and Spencer's, recipe dishes are becoming a large, still expanding market.

Northern has three factories which are now reaching the phase wbere investment is coming through strongly, and it has exclusive supply arrangements with M and S. Furtber investment will increase productivity, keeping prices competitive with products such as frozen foods, he says.

Mr Haskins has no doubts tbat there is still plenty of growth for Northern in the UK, both from internal investment and small bolt-on acqusitions. "I'm not shy about the prospects for profit growth in the UK."

However, even maintaining a high level of investmeut, Northern will soon start generating excess cash. The question is where to spend it.

Mr Haskins reckons he can easily spend £70m e year on small acquisitions for the next two or three years. And on a five year view, he thinks "we could satisfy shareholders just by going on doing what we are doing".

Perhaps another big deal looms.

Mr Haskins admits "our record on investment is good, but our record on acquisitions is not perceived as good because of the US experience."

New edventures in the US might frigbten sharebolders with long memories, while moves into Europe are unlikely while the food retailing infrastructure is so far behind thet of the UK.

Many of Northern's products have such short sbelf lives thet only the highly efficient distribution systems of the big UK supermarket groups can cope.

"I would be amazed if less than 90 per cent of the group's profits came from the UK in five years time."

Control Techniques shares jump

By Richard Gourlay

THE SHARES of Control Techniques, jumped 38 per cent yesterday on news that Emerson Electric, the US electricals group, will take up to 29.99 per cent of the Powys-based motion and process control products specialist.

Emerson will acquire part of the stake through a tender offer at 320p for 3.8m shares, representing 12.5 per cent of the existing equity.

The balance comes as a result of Control Techniques' purchase of 80 per cent of ICD Drives, a New York subsidiary of Emerson, satisfied by the issue of 7.8m new shares.

In connection with the acquisition, Control Techniques has entered into an agreement to supply Emerson with standard drives in the US and Europe, which could lead to "substantially increased sales of standard drives from the company's UK plants".

ICD had sales of $56.2m in the year to the end of September 1990 and pre-tax profits of $4.7m. It employs 460 people.

Control Techniques' share price closed up 63p at 227p.

Control Techniques also announced pre-tax profits for the six months to the end of March of £1.1m, down from £2.6m in the previous period and earnings per share down to 2.3p from 7.2p.

The company is to maintain its interim dividend of 2.15p.

The economic downturn and the Gulf war resulted in customers destocking and postponing capital expenditure plans, Mr Trevor Wheatley, the chairman said. During the period four acquisitions were made.

Second half downturn leaves Acal behind

IN SPITE of a 9 per cent increase in sales, pre-tax profits of Acal, the USM-quoted electronics and industrial controls distributor, fell marginally from £4.41m to £4.3m in the year to end-March.

Turnover rose from £54.66m to £59.7m and at the operating level profits advanced 7 per cent to £5.06m (£4.73m). The interest payment rose to £898,000 (£503,000).

Mr John Curry, the chairman, said the year had started according to plan with acquisitions made in 1989-90 giving a boost to turnover.

However, the company had been confronted by a far weaker economy across Europe than had been perceived, with the result that turnover in the second half fell from £30.7m to £29m.

Earnings per share for the year increased from 19p to 20.5p and the board is recommending an improved final dividend of 3.6p (3.12p) making a total for the year of 5.4p (4.68p).

London Scottish declines 10%

By David Barchard

PROFITS AT London Scottish Bank, the Mancbester-based personal loans and consumer finance group, dipped for the first time for more than a decade in the six months to April 30.

London Scottish, which specialises in medium-term lending to council tenants, made pre-tax profits of £1.64m, down almost 10 per cent on last year's £1.81m.

Mr Jack Livingstone, chairman, said that loans granted in the period had gone down for the first time since 1975, while a deteriorating trend in arrears had forced the company to make bad debt provisions of £340,000.

Turnover grew by 5.6 per cent to £14.63m (£13.85m) while interest income increased to £9.56m (£9.48m) and collection commissions rose to £2.08m (£1.8m). Insurance income was £1.89m (£1.61m).

Retail sales were steady at £889,000 (£881,000).

Net advances to borrowers rose by 8.8 per cent, reaching £37.78m, np from £34.67m a year earlier.

Mr Martin West, chief executive, said the results reflected efforts last year to reorganise and streamline the company. "We are well hedged against interest rate movements, either up or down, and we believe that we have got a very solid base for the second half of the year, whatever happens to the national economy," he said.

Earnings per share were 2.4p (2.5p) basic and 2.3p (2.4p) fully diluted. There was a retained profit of £860,000 (£929,000).

The interim dividend was unchanged at 0.875p.

FT LAW REPORTS

Casino must return thief's losses

LIPKIN GORMAN v KARPNALE LTD

House of Lords

(Lord Bridge of Harwich, Lord Templeman, Lord Griffiths, Lord Ackner and Lord Goff of Chieveley)

THE EXCHANGE of plastic chips for cash for gambling purposes is not good consideration giving rise to an enforceable contract, in that it forms part of the gaming contract which is null and void. Accordingly, a casino which innocently wins stolen money in the form of chips is unjustly enriched, having given no consideration for it, and must restore the money to the true owners to the extent that it has not changed its position to its detriment by paying out winnings to the thief.

The House of Lords so held when allowing an appeal by Lipkin Gorman, a firm of solicitors, from a Court of Appeal majority decision that they were not entitled to restitution of £150,960 stolen by a partner and lost at gambling to Karpnale Ltd, owner of the Playboy Club. A cross appeal by Karpnale against the Court of Appeal's decision that the solicitors were entitled to £3,735 damages for conversion of a stolen banker's draft was dismissed.

LORD TEMPLEMAN said that Mr Norman Barry Cass was a partner in the solicitors' firm. He stole £222,908 from their bank account.

He lost £154,695 of the stolen money at the gaming tables of the Playboy Club, a licensed casino. The club acted innocently throughout.

The solicitors claimed restitution. The law imposed an obligation on the recipient of stolen money to pay an equivalent sum to the true owners if he had been "unjustly enriched" at their expense.

The solicitors could recover the £154,695 if they showed the club was unjustly enriched at their expense.

If Mr Cass had paid £20,000 for a car, the dealer would not have been enriched. He would have received £20,000 for a car worth £20,000. But an innocent recipient of stolen money would be enriched if he had not given full consideration.

The club claimed it gave consideration for the £154,695 by allowing Mr Cass to gamble and agreeing to pay his winnings.

The solicitors claimed the club acquired the money under void contracts and was in no better position than an innocent donee.

Section 18 of the Gaming Act 1845 provided that "all contracts . . . by way of gaming . . . shall be null and void".

The club contended that it received the money under a contract which was not a gaming contract.

Mr Cass was a club member. If he contemplated gambling he was bound to advance cash. He could pay the cashier in return for credit vouchers. If he tendered a credit voucher to a croupier he would be issued with plastic chips. He could if he wished pay cash to a croupier in return for chips.

If he acquired chips by winning or from a fellow member, the cashier would cash them for him. If he ordered refreshments he could pay in chips. Within the club the chips were treated as currency.

The club argued that when Mr Cass paid cash to the cashier or the croupier there came into a existence a contract which was not a gaming contract. In consideration of the money paid the club agreed to cash chips retained, won or otherwise acquired, and presented for payment.

That was a contract, so it was said, in contemplation of gaming and not a contract by way of gaming. If Mr Cass staked a chip and the croupier accepted the stake and played, a second contract came into existence. There were, according to the club, two separate contracts. By the first Mr Cass exchanged cash for chips, and that was not a gaming contract.

The club could not retain the stolen money save by relying on the gaming contracts. Those gaming contracts were void. The club remained unjustly enriched to the extent of £154,695.

Anther way of analysing the situation was that when Mr Cass entered the club it made him a revocable offer to gamble on terms dictated by the club. Those terms required him to pay his gambling stakes in advance. The revocable offer by the club was accepted by Mr Cass when he staked a chip, and became irrevocable when the croupier accepted the chip as a stake.

There was only one contract and that was a gaming contract.

The club claimed that even if the only consideration given was a gambling consideration, it altered its position to its detriment because it allowed Mr Cass to gamble and paid his winnings.

That was another way of relying on a void gaming contract to justify retention of the solicitors' money. The club had not suffered any detriment. If it paid the solicitors £154,695 it would be in exactly the same position as if Mr Cass had not gambled away their money. It would have been in a better position if he had been gambling away his own money, but that did not entitle it to retain the solicitors' money by which it remained unjustly enriched.

Money stolen from the solicitors was retained by the club and ought to be repaid. The solicitors would recover part of their stolen money and the club would only lose the winnings it was not entitled to make.

The appeal was allowed.

Included in the £154,695 was £3,735 representing a banker's draft made out to the solicitors and indorsed by Mr Cass to the club for chips, which he then gambled and lost. The Court of Appeal held the club had not become holder of the draft in due course and gave judgment for the solicitors. The club cross-appealed.

The draft represented money derived from the solicitors which had unjustly enriched the club. There was no difference between the cash and the draft. The cross appeal was dismissed.

LORD GOFF said that in common sense terms those who gambled at the club were not gambling for chips. They were gambling for money. The handing over of cash and receipt of chips was simply a gratuitous deposit of money. The club could not say it had given valuable consideration for the money.

Mr Lightman for the club asserted that recovery should be denied because of the change of position of the club, which had acted in good faith throughout.

Whether change of position should be recognised as a defence to claims in restitution had been much debated in the books. The consensus was that such a defence should be recognised in English law.

There had however been no general recognition of a defence of change of position as such in the authorities. It had been usual to approach the problem as one of estoppel.

The time for recognition was long overdue.

In recognising it as a defence to actions for restitution, nothing should be said at the present stage to inhibit its development case by case.

The defence was not open to one who had changed his position in bad faith.

It was available to a person whose position had so changed that it would be inequitable to require him to make restitution, or to make restitution in full. The mere fact that he had spent the money, did not of itself render it inequitable that he should be called on to repay.

Applying the principle to the present case, it was the totality of bets which yielded the occasional winning bet; and the occasional winning bet was therefore, in practical terms, the result of the club changing its position by incurring the risk of loss. So it would be inequitable to require the club to repay in full without bringing into account winnings paid by it to the gambler.

The solicitors' appeal was allowed in respect of the £150,960.

With regard to the banker's draft, the effect of its having been made payable to the solicitors and not to a third party (see *Mann [1961] AC 1*) was that the solicitora had an immediate right to possession. On that basis, from tha moment the draft was delivered to Mr Cass by the bank, they had vested in them sufficient title to enable them to bring an action for damages for conversion of the draft against Mr Cass, or in due course, against the club. The club did not become holder in due course. The cross appeal must fail.

THEIR LORDSHIPS agreed that the appeal was allowed for the reasons given in both judgments. They agreed that the cross-appeal should be dismissed for the reasons given by Lord Goff. Lord Bridge and Lord Ackner agreed with Lord Goff that English law should recognise change of position in good faith as a defence to a claim for restitution.

For the solicitors: Dermod O'Brien QC and Thomas Putnam (Reynolds Porter & Chamberlain).

For the club: Gavin Lightman QC and Alan Boyle QC (Clifford Chance).

Rachel Davies
Barrister

THE BUSINESS SECTION ALSO APPEARS ON PAGES 12, 13, 14 & 29 TODAY

COMMODITIES AND AGRICULTURE

New York market leads further gold price rise

By David Blackwell

GOLD BULLION was fixed at $372.20 a troy ounce in London yesterday afternoon – the highest level since January 29. The market went on to close et $372.95 an ounce, up $6.20 on the day.

The afternoon edvanco through resistance at $370 was spurred by rising futures prices on New York's Comex, where the active August contract was ebove $376 an ounce in early afternoon trading.

Dealers said that talk of buying from the Middle East was persistent, but could not ho confirmed.

Mr Andy Smith, precious metals analyst at Union Bank of Switzerland, said it was difficult to know if tho npward move was based on technical or fundamental factors.

He pointed out that the markets had been quiet, the charts were looking positive, and silver's recent strong performance had refocussed attention on the precious metals sector.

Mr Jon Bergtheil of James Capel said he was reasonably confident that gold, which in April reeched a nine-month low of $353.55 an ounce, had seen the bottom of the market. It would now progress, albeit haltingly, towards $400 an ounce.

The strong demand for jewellery, particulalry in the Middle East and Southeast Asia, coupled with the fact that world supply had already peaked and forward selling by mimes was likely to decline gave "the best set of positive indicators for a long, long time", he said. Silver attempted yesterday to break through 460 cents a troy ounce, but settled back in the afternoon as the market appeared to be overbought.

Modest copper surplus forecast

By Kenneth Gooding, Mining Correspondent

RTZ CORPORATION, the world'e largest mining group, predicts that copper supplies will outpace demand by less than 100,000 tonnes this year – which would give little leeway if there was an unexpected, serious drop in production.

Total copper stocks remain very low, eays Mr Martin Thompson, the gronp's commercial adviser. Consequently, *the price is unlikely to fall far* below US$1 a lb or stay below that level for very long.

He suggests that copper producers are unlikely to escape in 1991 the various problems that held back output last year, particularly as Chile faces the first completely free wage negotiations for many years. So supplies of refined copper in the market economy countries are not likely to top 8.75m *tonnes this year* compared with 8.53m tonnes in 1990.

While it would be optimistic to expect consumption not to drop from last year's 8.93m tonnes, there is no need to fear a substantial reduction.

Mr Thompson is much more optimistic about copper's prospects than most other commentators and his comments are contained in an analysis for Mining Journal's annual *Metals & Minerals Review*, to be published shortly. RTZ has a vested interest in the health of the market because it is the world'a second-largest producer, after Codelco of Chile, and accounts for more than 5 per cent of supplies in the market economy countries.

Copper consumption in those countries last year was much better than generally expected, Mr Thompson points out, and improved by more than 2.5 per cent. Consumption therefore kept well ahead of production of refined copper which rose by only 1.4 per cent.

Consumption fell slightly in the US and heavily in Brazil, Canada and Taiwan. It rose strongly in Japan and most European countries – with the exception of Britain – performed well.

Production was restricted by problems in Peru, where there were technical difficulties stemming from the country's financial situation, and by lower outpnt from the African copper belt where Zaire's output fell by nearly 25 per cent.

According to Mr Thompson, copper mine production in 1990 totalled 7.28m tonnes, up 1.8 per cent. Chile'e ontpnt, affected by Codelco's reduced production, toppled that country from the top of the producers' league table. It fell behind the US as the largest primary producer of copper. The US prodnced 1.64m tonnes compared with Chile's 1.59m tonnes.

Mr Thompson gives a warning that, although the copper price continnes to he well *above most mines' costs, these* are no longer falling. There is some evidence that costs are gradually increasing. He says recent wage settlements have lifted mines' costs significantly, some higher-cost capacity has been reactivated or expanded and that the extraordinary efforts made by some mines to cut costs in the recession of the mid-1980s are now catching up with the industry.

Mr Thompson *suggests* copper mine capacity at the end of last year was an annual 7.45m tonnes. Projects under consideration could, in theory, add more than 1.2m tonnes to capacity in the next four years.

"Metals & Minerals Annual Review," £20 or US$40 from Mining Journal, 60 Worship Street, London, EC2A 2HD, England.

Western Copper Mine Production* ('000 tonnes)

Country	1990	1989	1988
US	1,637	1,498	1,420
Chile	1,588	1,609	1,451
Canada	810	732	777
Zaire	356	441	465
Zambia	538	510	476
Australia	328	295	238
Mexico	302	249	279
Peru	298	364	298
South Africa	194	197	192
Philippines	185	193	218
Total	7,283	7,154	6,736

**Including leach production. Source: Mining Journal*

LME extends metal contract periods

UNDER CHANCES that came into effect yesterday the terms of the London Metal Exchange copper, aluminium and zinc contracts have been widened to allow deals to be struck for up to 27 months ahead. Contracts previously stretched to e maximum of 15 months and much of the metal producers' risk beyond that time was borne by brokers.

The excbange has alao increased the range of currencies in which contracts can be traded to include Deutsche Marks and Japanese yen. But dollars and sterling will contiune to be the only currencies quoted in the official ring dealing sessions.

Fighting in the dark against mystery pig disease

The cause has been identified but a preventative vaccine could take years to develop

FARMER'S VIEWPOINT

By David Richardson

THE NEWS, last Thursday, that Dutch scientists had at last succeeded in isolating the micro organism responsible for a mystery pig disease that is devastating European herds was hailed as a breakthrough. It would, said an official of the Dutch Central Veterinary Institute, allow researchers to begin work on developing a vaccine to control it.

The trouble is that it could take years to develop and in the meantime the disease will continue to epread. Indeed within the next few days it is likely to be confirmed that some British pigs have already been infected.

Government veterinary officers have, since the May 24, imposed pig movement restrictions on an area of Humberside where it is suspected that the first British cases have occurred. *Diagnosis* has been difficult because until last week no one knew what was cauaing the disease. It has therefore been necessary to eliminate all other conditions that exhibit similar symptoms, and that has taken time.

The Dutch discovery of the virus-like micro organism – now named Leylystad agent, incidentally – will enable positive diagnosis to take place. If *this* confirms that the eight Humberside herds and one in County Dnrbam currently under suspicion do in fact have the disease prospects for the UK pig industry over the next few months are bleak.

For blue ear disease, or mystery swine disease, or porcine reproductive and respiratory syndrome, all names it has been given hy sclentists searching for the causal agent, is devastating in its effect on a pig herd and is very contagious indeed.

Initially affected pigs appear to have influenza. They have e high temperature and experience difficulty in breathing. Later bright red patchea appear on their bodies, especially around the vulva and the udder and also on their ears. As these inflamed areas cool down they turn a bluish colour, hence the name that is mainly used in this country, blue ear disease.

After several days, adult pigs usually recover and it is thought are immune from further infection. Pregnant female pigs however, especially those that are within a few weeks of giving birth, often abort their piglets. Even if the little pigs are born alive they quickly die.

Infected sows that go their full term may have live piglets, but because of the mother's infection and the fact that she has no milk those piglets also quickly die, if not of blue ear disease, of some secondary infection from which they have no protection.

As the disease spreads through e herd over the course of a period of weeks it is clear therefore that a complete generation of piglets is lost. And although scientists believe that future generations, bred from previously infected animals will inherit some degree of immunity the short term financial implications are horrendous.

The disease or something very similar, was first recognised in the US in 1987. It apread through the main pig-producing areas foiling all attempts by scientists and veterinary surgeons either to stop it or to identify what was causing it. It was thought, however, that it was spread on the wind.

Last October the disease turned up in Germany. It is not known how it got there but a total of about 4,000 German herds have since been affected.

By December of last year it had crossed into Holland. The Dutch pig industry is one of the most concentrated in the world and the disease quickly spread, again presumably on the wind, through many of the herds in the south of the country. To date there have been about 1,400 cases of Blue Ear Disease in Holland.

In the meantime in an attempt to stamp out the disease the European Commission imposed stringent restrictions on the movement of pigs from infected areas. This did not, however, stop the spread into Belgium where 66 cases have so far been officially diagnosed.

In April the disease was found in Spain where just two cases have been officially notified so far to the authorities. How it could have jumped France remains a mystery but the fact thet there is a regular trade in live pigs between Holland and Spain may well be significant.

Then three weeks ago the first suspected case was found on Humberside. As in Holland there are pig farms every few hundred yards and if blue ear is confirmed there is little doubt that it will infect a great many of them. But how did the disease cross the North Sea?

For although it is possible that the micro organism could travel up to 50 miles on the wind it ie thought very unlikely that it could jump the water between Holland and Humberside by that means. Birds are clearly a possibility and so are people and vehicles, particularly if they have been in close contact with the disease.

For that reason all the major agricultural show societies in this country including the specialist Pig Fair in April have cancelled classes for pigs. They are aware of the possibility of foreign visitors to such events and having taken Ministry of Agriculture advice are not prepared to run the risk of infecting pigs in competitive classes. Most societies have also asked exhibitors not to bring live pigs for their trade stands.

Meanwhile, however, there have been persistent but unsubstantiated rumours in recent weeks that Dutch pig buyers have been roaming the intensive pig producing areas of this country (such as Humberside) in search of weaner pigs to fill finishing pens left empty because of blue ear in Holland. Furthermore they are said to have been offering premium prices for such pigs and when such offers have been accepted bringing Dutch lorries to collect them and take them home by North Sea ferry.

If such stories are true, and they were repeated in last week's issue of Farming News magazine, the level of irresponsibility by Dutch buyers, the British pig breeders involved and the Ministry of Agriculture for allowing it to happen, beggars belief. It must be said, however, that government veterinary officers I have questioned deny all knowledge of such transactions.

They point out that before being exported all live stock have to certified healthy by a qualified veterinary officer; to have been kept on one approved holding for 30 days and to have passed all health tests required by the importing country. They say that no such requests have been put to them and they do not believe the export of weaners to Holland can be happening as alleged.

However, the rumours persist. At the very least the matter should be investigated and if it had substance the practice should be stopped forthwith. But if those sick pigs on Humberside are found to have Blue Ear Disease it may of course be too late. The British pig industry will have an epidemic on its hand.

The only good news about blue ear is that it poses no danger to humens. As the European Commission in Brussels announced on April 31 in spite of the thousands of cases across Europe and the US in which farmers and their workers have been in intimate contact with infected pigs every day there has not been a single human health problem. Blue ear, Lelystad disease or whatever they eventually call it is specific to pigs.

Soviet oil and gas exchange opens this month

By Leyla Boulton in Moscow

A SOVIET-style commodity exchange in Tyumen, the country's largest oil producing region, plans to start trading oil and gas on a spot basis on June 27.

The *initiative* has been prompted by last month'e presidential decree allowing Soviet oil and gas workers to sell 10 per cent of their output on the free market on condition they meet state export quotas and do not strike.

Mr Viktor Morozov, the exchange's vice-president, said this meant the exchange could sell some 30m tonnes of oil a year. Providing there was political stability in the Soviet Union and the exchange managed to get hold of satellite communications, be said the aim was eventually to rival the oil markets of London, Amsterdam and New York.

The exchange'a 240 founding shareholders, who each paid npwards of Rbs125,000 for a single share, include the main otate-ownad enterprIses responsible for extracting Tyumen's oil and gas, as well as banks and industrial enterprises.

Shareholders antomatically *obtain a broker's place giving* them the right to trade on the exchange. The exchange takes 0.4 per cent of the valne of any deal as commission.

Two foreign shareholders, who each paid $100,000 for a share, were named as Amruss, a US company trading in oil and precious metals, and Fest Co, a Czechoslovakian company. Deutschebank has also made inquiries about acquiring a place on the exchange on behalf of clients.

Mr Morozov said that eastern European countries were also eager to get a piece of the action in view of their problems in obtaining deliveries promised by the Soviet government.

A trial run at the exchange last month saw oil trade at world prices, both for ronbles and in hard currency. Prices were displayed on a television screen linking Tyumen and the exchange's Moscow subsidiary, with brokers negotiating deals *by telephone between the two* places.

Mr Morozov said the exchange had accumulated capital totalling Rbs60m from Soviet shareholders plus $1m from foreign shareholders, including joint ventures which are half owned by foreigners.

Mr Valery Neverov, an exchange executive based in Moscow, said the first day of trading would also see an auction of five new places for Soviet investors - with a starting price of Rbs550,000 a piece - and another five for foreigners - with a starting price of $110,000.

Sovlet commodity exchanges, born from the collapse of the state distribution network, are basically physical markets for all kinds of commodities and consumer goods. They have little in common with their western counterparts, although many aim to become western-style commodity exchanges in the long-run. *The Tyumen exchange* for instance, which will also deal in timber and other building materials, would like to develop standard forward and futures contracts.

The Moscow Commodity Exchange last week began trading forward grain contracts. The first session on Thursday saw the sale by 34 collective and state farms of 2,500 tonnes of grain from the September harvest for Rbs1,250 a tonne. Even Exportkhleb, the state agency for grain imports, has bought three seats on the exchange. Mr Gennady Poleschuk, the exchange chairman, said Exportkhleb aimed one day to export grain. He said that grain imported by the state might also be eold through his exchange.

OBITUARY

Jack Pierce: chief executive of Ranger Oil

MR JACK Pierce, 67, chief executive of Ranger Oil, the Canadian energy producer *with extensive North Sea* interests, died at the weekend of a heart attack while rounding up cattle at his ranch in south-west Alberta.

Mr Pierce, who built up Ranger Oil from scratch, was one of the more colourful characters in the Canadian oil industry. He was a Montreal-trained engineer who had a passion for flying and a reputation for caustic comments about the industry.

The death of Mr Pierce has increased uncertainty about the future direction on the company, in which be beld only a 3 per cent stake.

The two largest shareholders are Norsk Hydro, with 11.8 per cent, and Westcoast Energy, the Vancouver-based pipeline operator.

WORLD COMMODITIES PRICES

MARKET REPORT

News thet US producer Reynolde Metale Is to close temporarily three out of five potlines at its 121,000 tonnes a year Troutdale, Oregon, emelter prompted a shortcovering rally in LME aluminium prices. "This is the first major producer to make a cut, just what the market'e been waiting for," one trader seid. But he added that it would take more than the 70,500 tonnes a year capacity reduction at Troutdele to cut into the large surplus building at producers and in LME warehouses. Tin prices closed down, amid persistent merket talk of Malayelen benks unloading metal stocks held since the International Tin Council crisle of 1985. Dealers said the banks held about 7,000 tonnes of tin and were gradually liquidating their holdings in an orderly manner. The reports effectively blocked any follow-through to tast week'e rise in tin prices. Three-month nickel closed ebove support et $8,100 e tonne. Cocoa prices closed around the day's highs, boosted by chert-based buying and increased manufacturer interest, dealers said. "I think after today'e performance we ehould be set to make further gains," one dealer said. Industry buying was noted both in futures and options.

Compiled from Reuters

London Markets

SPOT MARKETS

Crude oil (per barrel FOB)		+ or -
Dubai	$15.30-5.50	-.025
Brent Blend (dated)	$18.00-8.10	-.225
Brent Blend (Jul)	$18.25-8.30	-0.25
W.T.I. (1 pm est)	$20.05-0.15u	-0.25

Oil products (NWE prompt delivery per tonne CIF)		+ or -
Premium Gasoline	$245-247	-1½
Gas Oil	0174-176	-1
Heavy Fuel Oil	367-68	
Naphtha	$195-198	-3
Petroleum Argus Estimates		

Other		+ or -
Gold (per troy oz)♣	372.95	+6.20
Silver (per troy oz)♣	454.5c	+2.0
Platinum (per troy oz)	$384.25	+0.50
Palladium (per troy oz)	$98.75	+1.75
Aluminium (free market)	$1225	-5
Copper (US Producer)	103.75c	
Lead (US Producer)	35c	+4
Nickel (free market)	377c	-5
Tin (Kuala Lumpur market)	15.50r	-0.04
Tin (New York)	266c	-3
Zinc (US Prime Western)	62c	
Cattle (live weight)†	114.09p	+0.37*
Sheep (dead weight)†	152.17p	-4.82*
Pigs (live weight)†	89.09p	+0.22*
London daily sugar (raw)	$222q	+1
London daily sugar (white)	$303.0q	+0.5
Tate and Lyle export price	£241.5	+2.0
Barley (English feed)	Unq.	
Maize (US No. 0 yellow)	£162.75	
Wheat (US Dark Northern)	£100	
Rubber (Jul)♥	56.00p	
Rubber (Aug)♥	55.50p	
Rubber (KL RSS No 1 Jul)	231.5m	
Coconut oil (Philippines)§	$347.5x	
Palm Oil (Malaysian)§	$305q	
Copra (Philippines)§	$230x	-5
Soyabeans (US)	£164.5	+1.5
Cotton "A" Index	83.95c	
Wooltops (64s Super)	375p	

£ a tonne unless otherwise stated. p-pence/kg. c-cents/lb. r-ringgit/kg. q-Jun/Jul t-Jul/Sep u-Jul x-Jul/Aug y-Aug. †Meat Commission average fatstock prices. * change from a week ago. ♥London physical market. §CIF Rotterdam. ♣ Bullion market close. m-Malaysian cents/kg.

SUGAR – London FOX ($ per tonne)

Raw	Close	Previous	High/Low
Aug	194.00	193.40	195.00 190.00
Oct	182.00	183.00	184.00 180.00
Dec	191.00	194.00	187.00 182.20
Mar	181.60	182.00	182.00 180.00
May	185.40	185.60	184.00 183.00
Aug	197.00	192.00	187.00
Oct	197.00	192.00	189.00 187.40
White	**Close**	**Previous**	**High/Low**
Aug	296.0	296.0	297.0 291.5
Oct	262.0	261.5	261.0 256.0
Dec	256.0	255.8	
Mar	258.5	258.8	

Turnover: Raw 780 (1611) lots of 50 tonnes. White 257 (1466)
Paris- White (FFr per tonne): Aug 1781, Oct 1572.

CRUDE OIL – IPE ($/barrel)

	Latest	Previous	High/Low
Jul	18.10	10.50	18.50 18.09
Aug	18.44	18.77	18.70 18.43
Sep	18.75	19.07	19.04 18.74
Oct	19.00	19.33	19.13 19.00
Nov	19.13	19.50	19.37 19.12
Dec	19.30	19.55	19.50 19.30
IPE Index	18.58	18.42	

Turnover 14000 (18382)

GAS OIL – IPE ($/tonne)

	Latest	Previous	High/Low
Jun	172.00	174.50	175.00 171.60
Jul	170.25	171.00	172.25 170.00
Aug	172.25	172.25	173.00 171.75
Sep	174.50	174.00	175.00 174.25
Oct	177.00	176.75	177.25 177.00
Nov	179.25	178.75	179.50 179.00
Dec	179.75	179.50	180.25 179.00
Jan	177.00	177.00	177.00 177.00
Feb	173.75	173.50	174.60

Turnover 8872 (9367) lots of 100 tonnes

TEA

There was only fair demand this week, reports the Tea Brokers' Association. Bright liquoring teas and colour mediums attracted support but at lower levels. Plainer descriptions were often 5p lower with some withdrawals. Central African teas declined by 1p to 3p. The few Ceylons realised fully firm to dearer rates. Offshore teas met more general competition and prices were about steady on previous levels. Quotations: Quality 165p (170p), medium 108p (110p) and low medium 74p (75p).

COCOA – London FOX (£/tonne)

	Close	Previous	High/Low
Jul	623	613	626 618
Sep	658	646	660 646
Dec	686	684	698 690
Mar	728	717	729 721
May	748	737	750 740
Jul	767	757	767 762
Sep	785	777	788 781

Turnover: 6647 (10335) lots of 10 tonnes
ICCO indicator prices (SDRs per tonne). Daily price for Jun 7 783.46 (804.94) 10 day average for Jun 8 794.39 (793.56)

COFFEE – London FOX (£/tonne)

	Close	Previous	High/Low
Jul	542	546	542 536
Sep	567	573	567 562
Nov	589	596	589 585
Jan	609	610	607
Mar	629	636	629 626

Turnover:1632 (1550) lots of 5 tonnes
ICO indicator prices (US cents per pound) for Jun 7 : Comp. daily 65.91 (66.81). 10 day average 66.50 (66.66)

POTATOES – London FOX (£/tonne)

	Close	Previous	High/Low
Sep	75.0	75.0	
Mar	120.0	119.0	
Apr	119.4	117.0	119.7 116.0
May	132.5	125.0	

Turnover 228 (522) lots of 40 tonnes.

SOYAMEAL – London FOX (£/tonne)

	Close	Previous	High/Low
Dec	140.50	140.00	140.50

Turnover 25 (65) lots of 20 tonnes.

FREIGHT – London FOX ($10/index point)

	Close	Previous	High/Low
Jun	1610	1605	1615 1590
Jul	1465	1443	1465 1433
Oct	1564	1545	1564 1550
Apr	1570		1570 1570
BFI	1684	1695	

Turnover 161 (261)

GRAINS – London FOX (£/tonne)

Wheat	Close	Previous	High/Low
Jun	133.35	134.90	134.00 133.20
Sep	112.55	113.00	112.75
Nov	115.65	116.00	115.75 115.55
Barley	**Close**	**Previous**	**High/Low**
Sep	111.00	111.10	111.00
Nov	114.70	114.70	114.70
Jan	117.00	117.00	
Mar	120.70	120.75	

Turnover: Wheat 115 (175). Barley 20 (73).
Turnover lots of 100 tonnes.

PIGS – London FOX (Cash Settlement) p/kg

	Close	Previous	High/Low
Jul	115.0	115.0	
Nov	117.0	116.0	116.5 116.8
Jan	107.5	108.5	107.5 107.0

Turnover:116 (22) lots of 3,250 kg

NGUM – London FOX

	Close	Prev.	High	Low	Vol
Indx	135.21				
Jun	136.40	136.00	136.40	135.50	105
Jul	136.90	136.80	136.70	136.20	75
Sep	137.80	137.10	137.80	136.50	50
Dec	138.70	138.50	138.70	137.50	35
Mar	136.16		136.16		20
Jun	138.90		138.90		30

LONDON METAL EXCHANGE (Prices supplied by Amalgamated Metal Trading)

	Close	Previous	High/Low	AM Official	Kerb close	Open interest
Aluminium, 99.7% purity ($ per tonne)						Total daily turnover 18,774 lots
Cash	1220-2	1231-3		1221-2		
3 months	1232-3	1283-4	1255/1249	1252-3	1262-3	92,887 lots
Copper, Grade A (£ per tonne)						Total daily turnover 18,298 lots
Cash	1314-6	1316-8	1318/1312	1312-3		
3 months	1323-4	1323-4	1326/1315	1322-3	1328-7	129,176 lots
Lead (£ per tonne)						Total daily turnover 4,143 lots
Cash	325-6	321.5-3.0	323/321	321.5-2.0		
3 months	330-1	329-9.5	330.5/326.5	329-7	329-8.5	15,064 lots
Nickel ($ per tonne)						Total daily turnover 1,605 lots
Cash	8170-80	8125-45	8100/8080	8090-100		
3 months	8210-5	8160-70	8220/8135	8135-45	8180-200	13,042 lots
Tin ($ per tonne)						Total daily turnover 2,012 lots
Cash	5715-20	5745-65		5700-10		
3 months	5795-800	5820-30	5800/5785	5780-90	5780-90	8,021 lots
Zinc, Special High Grade ($ per tonne)						Total daily turnover 4,104 lots
Cash	1060-3	1062-4	1061/1059	1059-60		
3 months	1080-1	1081-2	1084/1077	1079-80	1083-4	27,826 lots

LME Closing £/$ rate: SPOT: 1.6690 3 months: 1.6496 6 months: 1.6334 9 months: 1.6220

LONDON BULLION MARKET (Prices supplied by N.M.Rothschild)

Gold (fine oz)	$ price	£ equivalent
Close	372.70-373.20	
Opening	367.00-367.00	
Morning fix	367.60	219.986
Afternoon fix	372.20	223.249
Day's high	373.00-373.40	
Day's low	366.60-367.00	

Loco Ldn Mean Gold Lending Rates (Vs US$)

1 month	5.55	6 months	5.39
2 months	5.50	12 months	5.33
3 months	5.44		

Silver fix	p/fine oz	US cts equiv
Spot	274.16	457.10
3 months	281.70	464.10
6 months	288.45	471.05
12 months	302.50	487.30

GOLD COINS (Prices supplied by Engelhard Metals)

	$ price	£ equivalent
Krugerrand	372.50-373.50	223.50-224.00
Maple leaf	380.00-381.00	228.00-228.50
New Sovereign	89.00-90.00	53.50-54.00

TRADED OPTIONS

Aluminium (99.7%)	Calls		Puts	
Strike price $ tonne	Jul	Sep	Jul	Sep
1100	88	113	2	9
1250	10	40	31	40
1350	1	13	116	106
Copper (Grade A)	**Calls**		**Puts**	
2100	114	122	7	42
2200	44	66	37	87
2300	11	34	103	151
Coffee	**Jul**	**Sep**	**Jul**	**Sep**
500	42	69	0	3
550	6	31	14	15
600	8	11	58	45
Cocoa	**Jul**	**Sep**	**Jul**	**Sep**
550	73		2	
600	29	65	29	7
650	2	32	77	24
Brent Crude	**Jul**	**Aug**	**Jul**	**Aug**
1850		57		
1900		32	69	87
1950				

CRUDE OIL (Light) 42,000 US galls $/barrel

	Latest	Previous	High/Low	
Jul	19.96	20.26	20.30	19.85
Aug	20.06	20.30	20.34	20.05
Sep	20.26	20.51	20.49	20.28
Oct	20.41	20.33	20.60	20.37
Nov	20.53	20.71	20.67	20.30
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

HEATING OIL 42,000 US galls, cents/US galls

[illegible]

COCOA 10 tonnes;$/tonnes

[illegible]

COFFEE "C" 37,500lbs; cents/lbs

[illegible]

SUGAR WORLD "11" 112,000 lbs; cents/lbs

[illegible]

COTTON 50,000; cents/lbs

[illegible]

ORANGE JUICE 15,000 lbs; cents/lbs

[illegible]

INDICES

REUTERS (Base: September 18 1931 = 100)

[illegible]

DOW JONES (Base: Dec. 31 1974 = 100)

[illegible]

New York

GOLD 100 troy oz.; $/troy oz.

[illegible]

PLATINUM 50 troy oz; $/troy oz.

[illegible]

SILVER 5,000 troy oz; cents/troy oz.

[illegible]

HIGH GRADE COPPER 25,000 lbs; cents/lbs

[illegible]

Chicago

SOYABEANS 5,000 bu min; cents/60lb bushel

	Close	Previous	High/Low	
Jul	572/4	583/4	583/0	571/4
Aug	575/6	586/6	586/0	575/0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

SOYABEAN OIL 60,000 lbs; cents/lb

[illegible]

SOYABEAN MEAL 100 tons; $/ton

[illegible]

MAIZE 5,000 bu min; cents/56lb bushel

[illegible]

WHEAT 5,000 bu min; cents/60lb-bushel

[illegible]

LIVE CATTLE 40,000 lbs; cents/lbs

[illegible]

LIVE HOGS 30,000 lb; cents/lbs

[illegible]

PORK BELLIES 40,000 lbs; cents/lb

[illegible]

LONDON STOCK EXCHANGE

Modest gains on base rate optimism

REPORTS that wage settlements in the UK manufacturing industry have fallen significantly revived hopes in the UK stock market yesterday that base rates might be cut again soon. Share prices staged a somewhat tentative rally from Friday's losses, before running out of support in late dealings when Wall Street opened lower again.

Base rate optimism, which found little support from either the London money markets or stock index futures, was fuelled by data from the Confederation of British Industry (CBI) indicating that pay settlements in manufacturing had fallen to 6.8 per cent in April from the average 8.1 per cent of the first three months of the year.

Wage settlements are regarded as a the key factor influencing prospects for further base rate reductions. The CBI report focused the stock market's attention on prospects for the Retail Price Index for May, to be announced on Friday.

The consensus in the City of London is that the May figures will show a fall in year-on year inflation to around 5.9 per cent, and that the fall in wage settlements will open the way for a further cut in UK base rates of at least half a point.

Account Dealing Dates		
First Dealings:		
June 3	Jun 17	Jul 1
Option Declarations:		
Jun 13	Jun 27	Jul 11
Last Dealings:		
Jun 14	Jun 28	Jul 12
Account Day:		
Jun 24	Jul 8	Jul 22

*New-time dealings may take place from 8.30 am two business days earlier.

However, share prices started the day somewhat uncertainly following Wall Street's fall of 18 Dow points ahead of the weekend. There was no encouragement from the FT-SE futures market, where the June contract traded at an effective discount to the nnderlying cash market throughout the session.

The market climbed slowly in response to an improvement in UK government bonds. At best, equities showed a gain of 9.7 which put the Footsie at 2,516. The shine was taken off the market later as Wall Street, still refusing to respond to apparently favourable employment news on Friday, opened the new session with a loss of six Dow points.

The final reading showed the FT-SE Index with a net gain of 5.6 at 2,511.9, still floating in the middle of its latest trading range. Trading volume was unexciting at 373.1m shares against 393.8m in the previous session; both totals were dismissed bluntly as "unprofitable" by a dealer at one of the leading UK-based securities houses.

Equity strategists took a cautious view of yesterday's spate of base rate optimism. Political pressures for a rate cut have been increased by the poor showing of the Conservative government in public opinion polls which continued last weekend to put the Labour opposition party in a significant lead.

But the response yesterday from interest rate-orientated stocks was modest. Property stocks improved, but often in response to corporate developments, while among the leading retail groups, gains in share prices were unconvincing.

The broader range of blue chip issues benefited from firmness in the US dollar, in which much of their earnings are measured. However, Glaxo gave back a little of its recent gains while ICI, still waiting for the next move by potential predator Hanson, added only a few pence.

There was ready support for several special situations, notably a placing of just over 10 per cent of the equity of Spring Ram, the home improvements company; the shares were placed, unusually, at a small premium to the market price, and taken up smartly by a range of the fund managers who have been so unwilling to trade in the open stock market in recent weeks.

Strong session in C & W

Cable & Wireless (C & W) shares were again a turbulent market, closing 10 up at 515p on turnover of 1.6m, ahead of Thursday's preliminary figures. These are expected to *show profits of about £600m*, compared with last year's £527m. The dividend is expected by the market to rise to 12p from last year's 10p.

Also boosting the shares were reports that the company may not have to pay as much to gain access to BT's telephone network as some had believed.

The shares were affected last week by rumours that Wharf Holdings, one of the big Hong Kong groups,may be considering setting up a telecoms network in the territory to rival that of C & W. The latter derives some 60 per cent of its income from Hong Kong.

Glaxo active

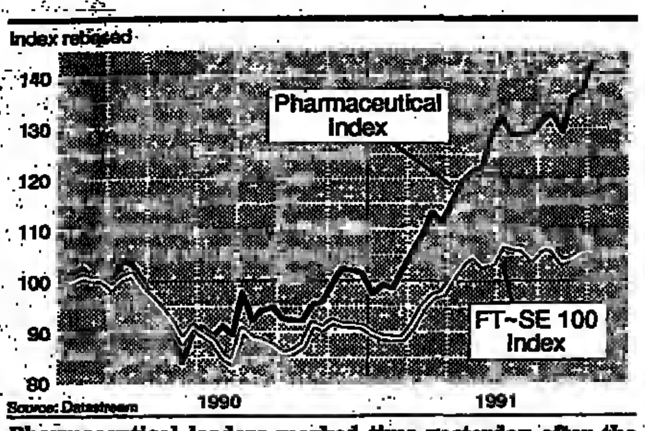
Glaxo shares reversed direction in mid-session as the company issued a statement playing down the promise of new applications for its cancer drug Zofran, also known as ondansetron. Much publicity was given yesterday to the news from a conference in Florence that Zofran improved memory in the alderly and helped combat anxiety.

The shares rose 19 before the company and analysts pointed out that the most rigorous testing of the drug was yet to come. Furthermore, since approvals must be obtained for different uses of the drug, it will be at least four years before Zofran is used for anything other than the control of the side-effects of cancer treatment, for which it was approved this year. Glaxo ended a net 10 down at 1228p in good turnover.

Asda calm

The market showed no surprise at news that Mr John Hardman had resigned as chairman and chief executive *of Asda, the foods and super*market group, together with Mr Graham Stow, boss of Asda's stores division.

Suggestions of a boardroom split have been in the market for several weeks, as have suggestions that a predator has been acquiring shares in the group which has been burdened with debt since its purchase of a large number of supermarkets from the Safeways group in 1989.



Pharmaceutical leaders marked time yesterday after the latest surge in their 10-month bull run. An index of the Footsie drugs stocks, Fisons, Glaxo, SmithKline Beecham and Wellcome, shows how much the sector has outperformed, especially in the last two weeks.

The shares moved 2 higher to 115p, following the news. Turnover was an unremarkable 2.6m. The market was reassured by a profits and dividend forecastissued along with the resignation of Mr Hardman, but there were suggestions in the market that the group may need a rights issue in the medium term.

Spring Ram shares held up strongly during a frantic session which saw a series of big share sales, equivalent to more than 10 per cent of the equity, change hands in the market after the company's chairman, and several directors and group officials, sold large lines of stock.

Spring Ram manufactures and distributes kitchens and other home improvements. The chairman and current directors sold about 28m shares, dealers said, while two former directors disposed of a further 14m shares at the same price.

Dealers were impressed with the performance of Spring Ram stock as the placing of the shares took place with a number of institutions, carried out by Panmure Gordon, Spring Ram's broker.

The shares held throughout the day at 105p, with turnover, which allowed for double counting of buying and selling orders, reaching 85m shares.

Lex Service, the vehicle distributor, rose 29 to 199p after announcing the disposal of its North American electronics components businesses. Turnover climbed to an unusually high 1.5m shares. Lex is separately offering its European electronic components businesses for sale.

Marketmakers and analysts welcomed the moves. Ms Sue Cox at UBS Phillips & Drew said that the two deals would eliminate almost all of the group's debt. "They are concentrating on the business they do best and strengthening the balance sheet." Sba changed her recommendation from hold to buy.

Under the North American transaction, Lex will receive $106m (£61.2m) in cash and a one-third stake in Arrow Electronics, the US company taking over the Lex businesses.

Switch recommandations instigated by two leading UK broking firms boosted Legal & General 5 to 420p but left Prudential 2 cheaper at 232p; the strength of the selling was evidenced by the big turnover – 7m shares – in Prudential.

Lasmo provided the main excitement in the oil sector, responding to suggestions of imminent good news from the group's Pine discovery in the Birch area of the North Sea. Several analysts are increasingly optimistic about the current testing.

Ms Angela Burns at County NatWest said Pine could be a potential 50 to 75m-barrel field, worth between 22p to 34p a share to Lasmo. Stories of good news from the Birch field have been circulating in the market for some two weeks.

Unilever lost ground in a renewed spate of talk that the company would make a large acquisition, perhaps in the US. The shares fell 11 to 744p in light trading.

Tha Electricity Package dipped 5 to £2137 after some determined selling pressure, but the power generators held np well, supported by keen demand from one of the leading UK integrated securities houses. Water stocks revived as dealers took the view that a general election this antumn is now unlikely.

The Water Package, where trading ceases on July 12 and where marketmakers are increasingly unhappy to take on the less marketable constituents of the unit, dropped a further 25 to £2900.

The Footsie stocks in the water sector made good progress, with Anglian 2 firmer at 296p, Thames 3 harder at 301p and North West, helped by a good weekend press, the same amount up at 288p.

The latest set of traffic statistics underpinned British Airways. Levels in May continued a trend of steady recovery since February. The shares added 3 at 432p.

Elga, the water purification specialist, added 2 at 98p after revealing full year profits 22 per cent ahead at £1.3m.

A split order to buy property sector leaders MEPC and Land Securities left their shares 9 better at 485p and 10 higher at 513p respectively.

Tha increased offer for Frogmore Estates from hostile bidder Southend Properties was not unexpected. The former's shares leapt momentarily to 335p but ended the day with a gain of only 4 at 319p. Southend eased 2 to 88p. The new offer is worth abont 350p a share.

Full year figures from British Land pleased the market. The company's net asset value of 406p a share contributed to a rise of 6 to 281p in the shares.

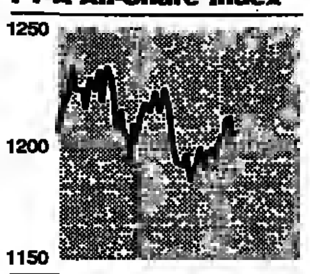
Continuing gloom in tha London office market left estate agency Savills 5 off at 43p.

Press comment on Reed International, in the wake of last week's results, helped the shares add 11 at 414p, making it one of the better performers in the FT-SE 100 Index. Magazine publisher Emap firmed 3 to 227p after posting full year profits down 19 per cent at £31m.

The market gave the thumbs up to Unigate's preliminary figures which were accompanied by news of the sales of a number of peripheral businesses. At the close, Unigate shares were 12 higher at 282p.

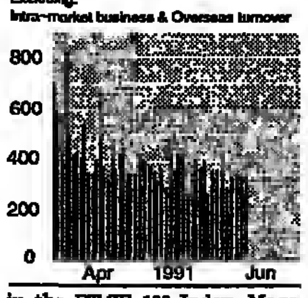
■ *Other markat statistics, including tha FT-Actuaries Shara Indices and London Traded Options, Page 24.*

FT-A All-Share Index



Equity Shares Traded

Turnover by volume (million)
Excluding:
Intra-market business & Overseas turnover



NEW HIGHS AND LOWS FOR 1991

NEW HIGHS (96).
BRITISH FUNDS (6) Treas. 8pc 1991, Treas. 10pc 1992, Treas. 8pc 1992, Treas. 10½pc Cnv. 1992, Treas. 2pc IL 1992, INT.BANK & O'SEAS GOVT. STLG. ISSUES (1) Utd. Mexican Sts. 16.5pc Ln. 2008, AMERICANS (3) Bankers NY, Cont'l. Bank., General Host, CANADIANS (10) Abbott Energy, Amer Barrick Res., BCE, Bk. Montreal, Bk. Nova Scotia, Can. Imp. Bank, Echo Bay Mines, Granges Expl., Hudson's Bay, Tor-Dom Bank, BANKS (1) HSBC, BUILDINGS (1) Douglas (RM), CHEMICALS (3) Cambridge Isotope, Engelhard, Plysu, ELECTRICALS (7) Alba, Control Tech., Domino Prntng, Moyo, Molynx, SD-Scicon, Wholesale Fittings, FOODS (2) JLI, Tesco, INDUSTRIALS (10) Airsprung Furn., Alfa-Laval B, Beapak, Faber Prest, Interserve, Johnson Cleaners, Le Creuset, Norcros, Williams, Worthington (A.J.), LEISURE (1) Carlton Comms., TEXTILES (1) Foxpet Trading, TRUSTS (17) Baring Puma, Derby Inc., Fidelity Japan OTC & Regd., Do. Wrrnts., EFM Inc. Zero Div Prf., Exmoor Dual Inc., General Oriental, Genesis Emrg. Mkts., Indonesia Equity, Do. Wrrts., Korea Libr., Law Deb., Olim Zero Prf., Precious Mtls., RIT Cap. 2.5pc Cnv. 2000, Templeton Emrg. Mkts., Do. 1pc Ln., OILS (1) Ranger, MINES (23) Anglo Amer. Gold, Anglo Amer., Amotagasta, Beatrix, Buffels, Central Pacific, Deelkraal, Dominion, Driefontein, ERGO, Elandsrand, Elsburg, Gold Fields SA, Hartebeest, Kloross, Kloof, OFS Invs., St. Helena, Southern Pacific, Vaal Reefs, Welkom, Western Areas, Western Deep.
NEW LOWS (26).
CANADIANS (1) Tara Pure Tech., BANKS (1) Ansbacher (H), BREWERS (1) Merrydown Wine, ELECTRICALS (2) Paloo, Trace Comps., ENGINEERING (1) Linread, INDUSTRIALS (5) Coesit, Davies (DY), GCF, Gestetner, Hornby, INSURANCE (2) Archer (A.J), LEISURE (2) HTV, Marina Devs., PROPERTY (2) Cardiff, MEPC, TRUSTS (9) Babcock Prebon, Caledonia, Melville Sr., OILS (3) Brabant, Ex. Co. of Louisiana, Do. A Cnv. Prf., PLANTATIONS (1) Bertam, MINES (2) Monarch Res., North West Expl.

FINANCIAL TIMES STOCK INDICES

	June 10	June 7	June 6	June 5	June 4	Year Ago	1991 High	1991 Low	Since Compilation High	Since Compilation Low
Government Secs	83.93	83.68	83.73	83.71	83.77	78.45	85.88 (19/2)	82.17 (2/1)	127.4 (9/1/35)	49.10 (3/1/75)
Fixed Interest	92.98	93.52	93.42	93.39	93.43	87.33	94.84 (5/4)	90.59 (2/1)	105.4 (28/11/47)	50.53 (3/1/75)
Ordinary Share●	1964.4	1955.2	1974.1	1974.8	1982.8	1877.9	2014.5 (5/4)	1606.3 (16/1)	2014.5 (5/4/91)	49.4 (26/6/40)
Gold Mines	201.7	185.4	182.4	181.2	182.0	187.5	201.7 (10/6)	127.0 (22/2)	734.7 (15/2/83)	43.5 (26/10/71)
FT-SE 100 Share	2511.8	2506.3	2525.3	2521.5	2506.0	2346.8	2545.3 (5/4)	2054.8 (16/1)	2545.3 (5/4/91)	986.9 (23/7/84)
FT-SE Eurotrack 200	1184.49	1184.89	1188.91	1192.11	1184.92	-	1192.11 (5/6)	938.62 (16/1)	1192.11 (5/6/91)	938.62 (16/1/91)
●Ord. Div. Yield	4.86	4.88	4.83	4.83	4.88	4.91				
●Earning Yld %(full)	8.49	8.52	8.43	8.44	8.52	10.82				
●P/E Ratio(Net)(☆)	14.57	14.52	14.67	14.65	14.52	11.18				
SEAQ Bargns 4.45pm	24,546	24,127	24,846	24,942	26,630	24,528				
Equity Turnover(£m)†	-	914.38	802.54	808.11	884.54‡	718.83				
Equity Bargains†	-	22,738	24,157	24,698	30,925	25,667				
Shares Traded (ml)†	-	341.4	352.1	352.1	365.6	299.0				

Basis 100 Govt. Secs 15/10/26, Fixed Int. 1928, Ordinary 1/7/35, Gold mines 12/9/55. Basis 1000 FT-SE 100 31/12/83 & FT-SE Eurotrack 200 26/10/90. ☆ Nil 13.93 ‡ Correction

Ordinary Share Index, Hourly changes — Day's High 1967.5 — Day's Low 1956.1

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
1958.5	1961.2	1957.6	1964.4	1964.8	1965.0	1965.7	1965.4	1966.2

FT-SE 100, Hourly changes — Day's High 2516.0 — Day's Low 2504.7

Open	9 am	10 am	11 am	12 pm	1 pm	2 pm	3 pm	4 pm
2510.6	2512.4	2506.0	2506.7	2513.3	2514.5	2515.4	2516.0	2513.9

FT-SE Eurotrack 200, Hourly changes — Day's High 1184.49 — Day's Low 1180.27

Open	10 am	11 am	12 pm	1 pm	2 pm	3 pm
1181.15	1180.82	1181.83	1182.53	1182.76	1183.00	1183.57

GILT EDGED ACTIVITY

Indices*	June 7	June 6
Gilt Edged Bargains	92.4	80.2
5–Day average	86.4	83.9

*SE Activity 1974.
†Excluding intra-market business & Overseas turnover.

London raport and latest Share index: Tel. 0898 123001

TRADING VOLUME IN MAJOR STOCKS

	Volume 000's	Closing Price	Day's change
ADT	714	78	+½
ASDA Group	2,800	115	+2
Abbey National	1,200	278	+1
Albert Fisher	3,200	118	+1
Allied-Lyons	2,300	551	+3
Amstrad	85	68	+1
Anglian Water	739	296	+2
Argos	558	306	
Argyll Group	2,300	306	+1
Arjo Wiggins	604	200	-1
Ass. Brit. Foods	129	529	+3
BAA	486	432	+3
BAT Inds.	1,100	719	+7
BET	1,000	172	+3
BICC	297	437	-1
BOC	71	551	+3
BPB Inds.	73	211	+1
BTR	2,400	389	+7
Bank of Scotland	373	105	+1
Barclays	1,000	432	
Bass	354	979	+5
Beazer	578	189	+2
Berisford Int.	210	38½	+½
Blue Circle	274	242	+1
Boots	2,200	386	+3
Bowater	125	602	
Brit. Aerospace	263	696	
British Airways	1,000	172	+3½
British Gas	2,200	259	-1
British Land	373	281	+6
BP	3,800	335	-1
British Steel	1,700	135	+½
British Telecom	4,700	378	-2
Bunzl	336	92	
Burmah Castrol	139	545	
Burton	6,600	72	-1
Cable & Wire.	1,600	515	+10
Cadburys	674	358	+3
Calor Group	181	217	
Carlton Comms.	544	504	+6
Coats Viyella	341	148	+1
Comm. Union	659	471	-3
Cookson	171	112	+1

	Volume 000's	Closing Price	Day's change
Courtaulds	410	393	+3
Dalgety	474	390	
De La Rue	124	404	
Dixons	65	214	
ECC Group	563	395	+6
Eastern Elect.	314	188	-1
East Midland Elect.	163	202	-1
Enterprise Oil	763	639	+3
Eurotunnel Units	128	495	+5
FKI	1,100	54	+1½
Ferranti	1,200	10	-½
Fisons	1,000	495	+8
Forte	382	259	+1
Gen. Accident	1,600	519	-1
General Elect.	2,000	194	+½
Glaxo	2,100	1228	-10
Glynwed Int.	145	227	+1½
Granada	297	152	+1
Grand Met.	680	782	+6
GUS A	80	1187	+1
GRE	75	185	
GKN	715	345	+5
Guinness	1,000	988	+6
Hammerson 'A'	11	612	+5
Hanson	3,800	222½	+½
Hanson Warrants	43	37	
Harrisons Crosfield	378	149	+4
Hawker Sidd.	116	580	+8
Hillsdown	651	202	
IMI	340	347	+7
ICI	983	1305	+3
Inchcape	386	327	-1
Kingfisher	378	488	+1
Ladbroke	825	259	
Land Securities	1,500	513	+10
Laporte	1,100	542	
Legal & General	1,400	420	+5
Lloyds Abbey	347	405	+1
Lloyds Bank	1,300	333	
LASMO	1,000	348	+7
London Elect.	227	206	-1
Lonrho	635	244	+1
Lucas	322	150	-1

	Volume 000's	Closing Price	Day's change
MB Caradon	294	221	+1
MEPC	297	485	+9
Manweb	41	250	-1
Marks & Spencer	3,300	253	+4
Maxwell Comms.	44	208	+½
Midland Bank	1,800	217	+3
Midlands Elect.	288	212	-1
NatWest Bank	971	308	-1
National Power	2,500	142	+1
Next	57	28½	
North West Water	1,500	288	+2
Northern Elect.	75	207	-1
Northern Foods	105	450	+1
Norweb	203	213	-1
Pearson	65	727	+2
P & O	275	569	-1
Pilkington	3,400	176	+3
PowerGen	3,800	148	+¼
Prudential	1,700	232	-2
RHM	827	279	+4
RMC	451	675	+2
RTZ	288	569	+4
Racal	5,600	236	-6
Racal Telecom	905	395	-4
Rank Org.	278	682	+3
Reckitt & Colman	215	1382	+4
Redland	367	574	+2
Reed Intl.	1,100	414	+11
Reg. Elect. Pkg Uts	9	£2137	-5
Rentokil	127	298	
Reuters	380	824	+5
Rolls Royce	2,200	163	+1
Rothmans	3	880	-3
Ryl Bk Scotland	71	181	
Royal Insurance	730	421	-1
Saatchi	2,700	17¼	
Sainsbury	780	373	+4
Scottish & New.	777	382	+2
Sears	2,100	80	-2
Sedgwick	339	260	+2
Seeboard	201	211	+1
Severn Trent Water	2,000	269	+1
Shell Transport	1,700	518	-2½

	Volume 000's	Closing Price	Day's change
Siebe	88	497	+2
Slough Ests	251	248	+6
Smith (W.H.) A	18	385	
Smith & Nephew	1,700	135	
SmKl Beecham	1,800	785	-2
SmKl Beecham Uts	181	[illegible]	-30
Smiths Inds.	92	248	
Southern Elect.	87	202	-2
South Wales Elect.	185	259	-1
South West Water	264	278	+3
South West. Elect.	54	222	-2
Southern Water	574	256	
Standard Chartd.	171	353	+3
Storehouse	35	114	
Sun Alliance	181	385	-3
T&N	127	127	+2
TI Group	388	505	+3
TSB	844	146½	+1
Tarmac	338	235	+2
Tate & Lyle	1,100	389	+5
Taylor Woodrow	80	224	
Tesco	1,000	281	+2
Thames Water	2,400	301	+3
Thorn EMI	131	742	+6
Trafalgar House	616	249	-2
Ultramar	882	283	
Unigate	2,000	282	+12
Unilever	469	744	-11
United Biscuits	842	367	+2
Utd. Newspapers	113	346	+2
Water Package Uts.	3	£2900	-25
Wellcome	380	825	-4
Welsh Water	1,000	314	+3
Wessex Water	182	326	+2
Whitbread 'A'	341	308	-1
Williams Hldgs.	100	382	+3
Willis Corroon	185	291	+1
Wimpey	54	204	-1
Yorkshire Elect.	306	238	-1
Yorkshire Water	707	315	+2

Based on the trading volume for a selection of Alpha securities dealt through the SEAQ system yesterday until 4.30pm.

EQUITY FUTURES AND OPTIONS TRADING

It was a quiet session in derivatives which gave little support to the base rate optimism which inspired the undarlying equity markets. The June future contract on the FT-SE Index traded at a small discount to fair value – the level estimated by market men to allow for dividend flows and financing costs over *the period involved;* traded options saw only one significant trade in the Footsie option and produced few features among the individual stock option trades.

The futures saw little business before lunchtime despite tha favourable reception in equities to a Confederation of British Industry report that some wage settlements in the UK were falling sharply.

The FT-SE Juna futures remained at a small discount to *its fair value calculation* of six points above the underlying Index. A few institutional buyers appeared later in the session bnt this had little effect on the Footsie which was still at a discount at the close.

On the London Traded Options Market, turnover dipped to 16,880 contracts from Friday's 21,052, with the FT-SE returning 3,489 against 5,8223. The Euro FT-SE topped the actives list after James *Capel sold around 1,500* December 2625 calls and bonght a similar number of December 2525 puts.

LONDON SHARE SERVICE

BRITISH FUNDS

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
		"Shorts" (Lives up to Five Years)				
99⅞	98⅞	Treas 10pc Cv '91 ‡‡	99⅞xd	......	10.01	11.21
100⅞	[illegible]	Exch. 11pc 1991	100	......	11.00	10.72
98¾	96⅞	Treas. 8pc 1991	98¾	+⅛	8.10	10.48
		Five to Fifteen Years				
[illegible]	97⅞	Exch 10½pc 1997	100⅞	[illegible]	10.50	10.45
[illegible]	89⅞	Treas 8¾pc 1997‡‡	92⅞	[illegible]	9.47	10.40
[illegible]	117	Exch 15pc 1997	119⅞	[illegible]	12.61	10.76
[illegible]	93⅞	Exch. 9¾pc 1998	96⅞	[illegible]	10.12	10.49
[illegible]	80⅞	Treas 6¾pc 1995-98‡‡	84⅞	[illegible]	8.00	9.89
[illegible]	121⅞	Treas. 15½pc '98‡‡	123⅞	[illegible]	12.53	10.68
[illegible]	104⅞	Exch. 12pc 1998	106⅞	[illegible]	11.22	10.58
[illegible]	92⅞	Treas 9½pc 1999‡‡	95⅞xd	[illegible]	9.95	10.36
[illegible]	105⅞	Exch. 12¼pc 1999	108⅞	[illegible]	11.31	10.61
102⅞	97⅞	Treas. 10½pc 1999	99⅞	[illegible]	10.51	10.49
101⅞	95⅞	Conversion 10¼pc 1999	98⅞	[illegible]	10.40	10.48
94⅞	89⅞	Conversion 9pc 2000‡‡	92⅞	[illegible]	9.76	10.34
11[illegible]	110⅞	Treas. 13pc 2000	113⅞xd	[illegible]	11.50	10.69
100⅞	94⅞	Treas 10pc 2001	97	+⅛	10.31	10.46
118⅞	113⅞	Treas. 14pc '98-01	115⅞	+⅛	12.16	10.82
98⅞	92⅞	Treas 9¾pc 2002	95⅞	+⅛	10.25	10.48

BRITISH FUNDS—Contd

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
100⅞	94⅞	Treas 10pc 2003	96⅞	+⅛	10.34	10.45
108¼	102	Treas. 11½pc 2001-04	104¾	+⅛	10.98	10.66
58⅞	53⅞	Funding 3½pc '99-04	56¾xd	+⅛	6.17	9.25
97⅞	90⅞	Conversion 9½pc 2004	93⅞	+⅛	10.17	10.39
97⅛	90⅞	Conversion 9½pc 2005	93⅞	+⅛	10.16	10.37
118⅛	111	Treas. 12½pc 2003-05	113⅛	+⅛	11.03	10.51
		Over Fifteen Years				
		Undated				
		Index-Linked				
142⅞	137⅞	Do 2½pc '01 (78.3)	141⅞	+⅛	3.94	4.23
138⅞	133	Do. 2½pc '03 (78.8)	137⅞	......	4.03	4.27
140¼	135	Do. 2pc '06 (69.5)	139⅞	......	4.10	4.30
128⅞	124⅞	Do. 2½pc '09 (78.8)	127⅞	......	4.14	4.32
132⅞	128⅞	Do. 2½pc '11 (74.6)	131⅞	......	4.14	4.31
109⅞	105⅞	Do. 2½pc '13 (89.2)	108⅞	......	4.15	4.30
117⅞	113⅞	Do. 2½pc '16 (81.6)	115⅞	......	4.12	4.26
113⅞	109⅞	Do. 2½pc '20 (83.0)	111⅞	......	4.08	4.21
95⅞	91⅞	Do. 2½pc '24‡‡ (97.7)	93⅞xd	......	4.04	4.16

Prospective real redemption rate on projected inflation of (1) 10% and (2) 5%. (b) Figures in parentheses show RPI base for indexing, (ie 8 months prior to issue) and have been adjusted to reflect rebasing of RPI to 100 in January 1987. Conversion factor 3.945. RPI for September 1990: 129.3 and for April 1991: 133.1.

INT. BANK AND O'SEAS

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
102	95⅞	African Dv Bk 11¼Ln 2010	98⅞	+⅛	11.29	11.32
97⅞	91⅞	Asian Dev Bk 10¼pcLn2009	94⅞	+⅛	10.86	10.96
112⅞	105⅞	Int-Am Dev Bk 12½pc 2003	109	+⅛	11.47	11.10
92⅞	86⅞	Do. 9¾pcLn 2015	89⅞	+⅛	10.93	11.03
122	101	Utd. Mexican States 16½pc 2008	122	+1	13.52	12.11

CORPORATION LOANS

COMMONWEALTH & AFRICAN LOANS

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
90	84½	Sth Rhod. 87-92 Assd.	90	......		

LOANS

Building Societies

Public Board and Ind.

1991 High	1991 Low	Stock	Price £	+ or –	Yield Int.	Yield Red.
53	52	Met. Wtr. 3pc 'B'	52	......	5.77	9.70

FOREIGN BONDS & RAILS

1991 High	1991 Low	Stock	Price £	+ or –	Div % Gross	Red. Yield
50	50	Greek 7pc Ass.	50	......	3.50	17.00
50	50	Do. 6pc 28 Stb. Ass.	50	......	3	16.00
50	50	Do 4pc Mixed Ass.	50	......	2	14.00
55	55	Hung. '24 Ass.	55	......	2.75	13.57
128	120	Hydro Quebec 15pc 2011	124	+½	12.89	11.80

Continued on next page

APPOINTMENTS

Changes at Conoco company

■ Mr Rob McKee chairman and managing director of CONOCO (U.K.), is to leave London for a senior appointment at Conoco's worldwide petroleum headquarters in Houston, Texas. He will take up his new duties as vice president, refining and marketing, North America, on June 17. He will be succeeded by Mr J. Michael Stinson, *(pictured)*, currently vice president and general manager, exploration and production for Conoco Inc in Houston. Conoco is a subsidiary of the Du Pont company.

■ Mr Jim Boyd has been appointed group financial director of CLYDESDALE GROUP, the Scottish-based electrical retailer. He was previously a director of London and Edinburgh Trust (Scotland) and Caledonian Land.

■ Mr David Hollywood has been appointed a director of BRAMMER. He is chief executive of Brammer's ESE *Rental Group.*

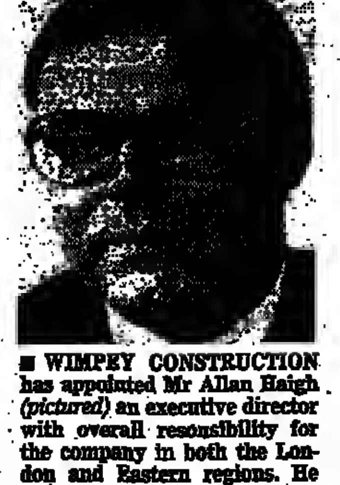
■ NATIONAL HOME LOANS HOLDINGS has appointed Mr Jonathan Perry as a non-executive director. Mr Perry is chairman and chief executive of Ogilvy Adams and Reinehart and principal of Perry & Associates.

■ Mr Robert L. Barclay, Mr Ian G. Daish, Mr Keith J. Earthrowl and Mr Matthew Scales have become executive directors on the board of ENGLISH AND AMERICAN GROUP.

■ Mr Peter Greensmith has taken over as chief executive of HALL & WOODHOUSE take-home division. Mr Greensmith has held a number of marketing and sales directorships including Campbells Frozen Foods, Food Brokers, Grand Met Brewing *(Ushers Brewery) and Cow and Gate.*

■ Mr Colin Grant has been made financial controller of OFFICE WORKSTATIONS. He joins from Rodime's operation in Boca Raton, Florida.

■ AMEC has appointed Mr Brian McCann as director of corporate development responsible for implementing the group's future strategy for growth. He was formerly with GEC Alsthom.



■ WIMPEY CONSTRUCTION has appointed Mr Allan Haigh *(pictured)* an executive director with overall resonsibility for the company in both the London and Eastern regions. He was previously a regional director, based in London. Mr Mike Godfrey takes on Mr Haigh's responsibilities for the London region.

■ Mr Paul Adams and Mr James Rembiszewski are to join the board of BRITISH-AMERICAN TOBACCO CO (BATCo), the UK-based tobacco subsidiary of B.A.T. Industries. Mr Adams joins the board in July as a territorial director responsible for the Far East and Australia. Mr Rembiszewski joins the board in August as marketing director and territorial director for a number of BATCo's European companies. Mr Adams is vice president responsible for marketing and business development. Mr Rembiszewski is director, market development, for Jacobs Suchard.

■ Sir Christopher Tugendhat, former chairman of the Civil Aviation Authority, is to join the board of EUROTUNNEL.

■ Mr David Dodd has been made chief executive of IFF (INTERNATIONAL FERRY FREIGHT), the pan-European container operator in the specialised dry-bulk field. Previously he was European customer service and development manager with ICI's chemical and ploymers operations, based in Belgium.

■ ERA TECHNOLOGY has appointed Dr Shiraz Adatia to the new post of director of technology. His main task will be to assess all new, relevant technological opportunities as they arise in order to determine whether, when or how they should be integrated into the company.

■ Mr William J. Clark has become director of corporate finance with PIC EUROPE. He was previously head of corporate finance with Chemical Bank, London. PIC Europe was established in London in 1985 to develop investment opportunities in the UK and Europe on behalf of its parent, The Prudential Insurance Co of America.

● Latest Share Prices are available on FT Cityline. To obtain your free Share Code Booklet ring the FT Cityline help desk on 071-925-2128

LONDON SHARE SERVICE

AMERICANS

CANADIANS

BANKS, HP & LEASING

Hire Purchase, Leasing, etc.

BEERS, WINES & SPIRITS

BUILDING, TIMBER, ROADS

BUILDING, TIMBER, ROADS – Contd

CHEMICALS, PLASTICS

DRAPERY AND STORES

DRAPERY AND STORES – Contd

ELECTRICALS

ELECTRICITY

ENGINEERING

FOOD, GROCERIES, ETC

HOTELS AND CATERERS

For Trusthouse Forte see Forte

INDUSTRIALS (Miscel.)

INDUSTRIALS (Miscel.) – Contd

INDUSTRIALS (Miscel.) – Contd.

INSURANCES

LONDON SHARE SERVICE

LEISURE

[illegible]

MOTORS, AIRCRAFT TRADES

[illegible]

Commercial Vehicles

[illegible]

Components

[illegible]

Garages and Distributors

[illegible]

NEWSPAPERS, PUBLISHERS

[illegible]

PAPER, PRINTING, ADVERTISING

[illegible]

PROPERTY

[illegible]

SHOES AND LEATHER

[illegible]

SOUTH AFRICANS

[illegible]

TEXTILES

[illegible]

TOBACCOS

[illegible]

TRANSPORT

[illegible]

TRANSPORT—Contd

[illegible]

INVESTMENT TRUSTS

[illegible]

Net asset values supplied by County NatWest Wood Mackenzie

INVESTMENT TRUSTS—Contd

[illegible]

FINANCE, LAND, ETC

[illegible]

WATER

[illegible]

OIL AND GAS

[illegible]

PLANTATIONS

Rubbers, Palm Oil

[illegible]

Teas

[illegible]

MINES

Central Rand

[illegible]

Eastern Rand

[illegible]

Far West Rand

[illegible]

O.F.S.

[illegible]

Diamond and Platinum

[illegible]

Central African

[illegible]

Finance

[illegible]

Australians

[illegible]

MINES—Contd

[illegible]

Tins

[illegible]

Miscellaneous

[illegible]

NOTES

Stock Exchange dealing classifications are indicated to the right of security names: α Alpha refers to shares traded through SEAQ by at least two marketmakers and with a normal market size of 2,000 or more, based on experience of how many of its shares are traded in the typical deal. β Beta refers to all other shares. γ Gamma refers to other traded instruments.

Highs and lows are based on intra-day mid prices. Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation and unrelieved ACT where applicable; bracketed figures indicate 10 per cent or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Yields are based on middle prices, are gross, adjusted to ACT of 25 per cent and allow for value of declared distribution and rights.

Estimated Net Asset Values (NAVs) are shown for Investment Trusts, in pence per share, along with the percentage discounts (Dis) or premiums (Pm -) to the current pre-closing share price. The NAV basis assumes prior charges at par value, convertibles converted and warrants exercised if dilution occurs.

- ● "Tap Stock"
- • Highs and lows marked thus have been adjusted to allow for rights issues for cash
- † Interim since increased or resumed
- ‡ Interim since reduced, passed or deferred
- ‡‡ Tax-free to non-residents on application
- ◆ Figures or report awaited
- ♥ Not officially UK listed; dealings permitted under rule 535(4)(a).
- ♣ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Not officially listed.
- # Price at time of suspension
- ¶ Indicated dividend after pending scrip and/or rights issue; cover relates to previous dividend or forecast.
- ♦ Merger bid or reorganisation in progress
- ◆ Not comparable
- ◆ Same interim; reduced final and/or reduced earnings indicated
- § Forecast dividend; cover based on earnings updated by latest interim statement.
- ‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ★ Cover does not allow for shares which may also rank for dividend at a future date. No P/E usually provided.
- ‖ No par value

B.Fr. Belgian Francs. Fr. French Francs. ¶¶ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. a Annualised dividend. b Figures based on prospectus or other official estimates. c Cents. d Dividend rate paid or payable on part of capital, cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending. q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast, or estimated annualised dividend rate, cover based on previous year's earnings. v Subject to local tax. x Dividend cover in excess of 100 times. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. H Preference dividend passed or deferred. C Canadian. E Minimum tender price. F Dividend and yield based on prospectus or other official estimates for 1990-91. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1991. K Dividend and yield based on prospectus or other official estimates for 1990. L Estimated annualised dividend, cover and P/E based on latest annual earnings. M Dividend and yield based on prospectus or other official estimates for 1991-92. N Dividend and yield based on prospectus or other official estimates for 1989-90. P Figures based on prospectus or other official estimates for 1991. Q Gross. R Forecast annualised dividend, cover and p/e based on prospectus or other official estimates. T Figures assumed. W Pro forma figures. Z Dividend total to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xd ex capital distribution.

REGIONAL & IRISH STOCKS

The following is a selection of Regional and Irish stocks, the latter being quoted in Irish currency.

Craig & Rose £1	450	......
Finlay Pkg. 5p	28	......
Holt (Jos) 25p	1820	-5
Helton Hldgs	42	......
IRG	148	......
United Drug	170	......

IRISH

Cap. 8½% Ln. 1991	£99¼	......
9pc Cap Ln. 1996	£98¼	......
Fin. 13% 97/02	£114	......
Arnotts	165	......

TRADITIONAL OPTIONS

3-month call rates

Industrials

	p
Allied-Lyons	46
Amstrad	7
Astec (BSR)	6
BAT	60
BOC Grp	31
BTR	33
Barclays	38
Blue Circle	24
Boots	30
Bowaters	53
Brit Aerospace	56
British Steel	12
Brit. Telecom	29
Cadburys	33
Charter Cons	45
Comm Union	44
Courtaulds	32
Eurotunnel	50
FKI	6
FMFC	20
Gen Accident	48
GEC	17
Glaxo	80
Grand Met	62
Guardian	19
GKN	31
Hanson	19
Hawker Sidd	39
ICI	80
Ladbroke	22
Legal & Gen	34
Lex Service	20
Lloyds Bank	38
Lucas Inds	13
Marks & Spencer	21
Midland Bk	18
Nat West Bk	27
P & O Dfd	51
Racal Elect	18
RHM	20
Rank Org Ord	40
Ratners	17
Reed Intnl	36
Sears	8½
SmKl. Beecham A	50
TI	45
TSB	12
Tesco	21
Thorn EMI	64
Trust Houses	23
T&N	15
Unilever	60
Vickers	19
Wellcome	48

Property

Brit Land	30
Control Secs	3
Land Securities	45
MEPC	40
Mountleigh	8½

Oils

Aviva Petlm	3
Brit. Petroleum	28
Burmah Castrol	49
Conroy Petlm	18
Gaelic Res	1
Premier	6
Shell	42
Tuskar Res	2
Ultramar	30

Mines

Lonrho	21
RTZ	48

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● Current Unit Trust prices are available on FT Cityline. Calls charged at 45p per minute peak and 34p off peak, inc VAT. To obtain your free Unit Trust Code Booklet ring (071) 925-2128

AUTHORISED UNIT TRUSTS

Init Chrge	Canc. Price	Bid Price	Offer Price	+ or -	Yield Gr's

Guide to pricing of Authorised Unit Trusts

Compiled with the assistance of Lautro §§

INITIAL CHARGE: Charge made on sale of units. Used to defray marketing and administrative costs, including commission paid to intermediaries. This charge is included in the price of units.

OFFER PRICE: Also called issue price. The price at which units are bought by investors.

BID PRICE: Also called redemption price. The price at which units are sold back by investors.

CANCELLATION PRICE: The minimum redemption price. The maximum spread between the offer and bid prices is determined by a formula laid down by the government. In practice, most unit trust managers quote a much narrower spread. As a result, the bid price is often set above the cancellation price. However, the bid price might be moved to the cancellation price by the managers at any time, usually in circumstances in which there is a large excess of sellers of units over buyers.

TIME: The time shown alongside the fund manager's name is the time of the unit trust's valuation point unless another time is indicated by the symbol alongside the individual unit trust name. The symbols are as follows: (♥) - 0001 to 1100 hours; (♣) - 1101 to 1400 hours; (♦) - 1401 to 1700 hours; (♠) - 1701 to midnight. Daily dealing prices are set on the basis of the valuation point; a short period of time may elapse before prices become available.

HISTORIC PRICING: The letter H denotes that the managers will normally deal on the price set on the most recent valuation. The prices shown are the latest available before publication and may not be the current dealing levels because of an intervening portfolio revaluation or a switch to a forward pricing basis. The managers must deal at a forward price on request, and may move to forward pricing at any time.

FORWARD PRICING: The letter F denotes that the managers deal at the price to be set on the next valuation. Investors can be given no definite price in advance of the purchase or sale being carried out. The prices appearing in the newspaper are the most recent provided by the managers.

SCHEME PARTICULARS AND REPORTS: The most recent report and scheme particulars can be obtained free of charge from fund managers.

Other explanatory notes are contained in the last column of the FT Managed Funds Service.

§§ Life Assurance and Unit Trust Regulatory Organisation,
Centre Point,
103 New Oxford Street, London WC1A 1QH
Tel: 071 - 379 - 0444.

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INSURANCES

OTHER UK UNIT TRUSTS

Continued on next page

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N & P Life Assurance Ltd
6-7 Bedford Row, London, WC1R 4UJ 071-430 2340

	Bid Price	Offer Price	+ or -	Yield Gross
Life Managed Fd	106.0	111.6	+0.1	-
Pension Managed Fd	103.4	108.8	-0.3	-
Life Deposit Fd	107.3	112.9	+0.1	-
Pension Deposit Fd	112.5	110.4	+0.1	-

National Financial Management Corp PLC
72 Gatehouse Rd, Aylesbury, HP19 3XJ 0296 395539

	Bid Price	Offer Price	+ or -	Yield Gross
Life Funds				
Managed Cautionary	109.3	120.2	+0.2	-
Managed Growth	137.2	150.9	---	-
Managed Opportunity	139.8	154.2	+0.2	-
NFMC Target Financial	99.7	107.4	---	-
Pension Funds				
Managed Cautionary	119.5	130.9	+0.1	-
Managed Growth	145.2	159.6	-0.1	-
Managed Opportunity	140.1	154.3	+0.1	-
NFMC Target Mngd Pen	1514.4	1646.1	-0.1	-

National Mutual Life
The Priory, Priory Pk, Hitchin, SG5 2DW 0462 422422

	Bid Price	Offer Price	+ or -	Yield Gross
Marvellor Pension Funds				
Managed	161.3	169.8	---	-
UK Equity	167.2	176.0	---	-
Overseas Equity	140.2	147.6	---	-
Fixed Interest	143.0	150.6	---	-
Property	128.7	135.5	---	-
Index Linked	147.9	136.7	---	-
Deposit	156.5	164.8	---	-
With Profits (B)	128.5	135.3	---	-

National Provident Institution
48 Gracechurch St, London EC3P 3HB 071-623 4200

	Bid Price	Offer Price	+ or -	Yield Gross
Managed	351.8	370.4	-1.0	-
UK Equity	442.8	466.2	-1.0	-
Overseas Eq	350.0	368.5	-2.5	-
American	288.6	303.8	-1.7	-
Far East	371.9	391.5	-4.5	-
Property	190.3	200.4	---	-

Prosperity Life Assurance Ltd
1 Sessions Hse Sq, Maidstone ME14 1XX 0622 690555

	Bid Price	Offer Price	+ or -	Yield Gross
Initial Equity	152.5	161.0	---	-
Accum Equity	217.5	229.5	-0.5	-
Accum Managed	226.0	238.5	...	-
Accum Five Star	171.5	181.0	....	-
Accum World	125.5	133.0	---	-
Accum Lifetime	110.0	110.0	+0.1	-
Pens Acc Equity	235.5	248.5	---	-
Pens Acc Managed	282.5	298.0	-0.5	-
Pens Acc Intl	214.8	225.5	-0.5	-
Pens Acc Deposit	198.5	209.5	---	-
Pens Acc Five Star	199.0	199.0	-0.5	-

Providence Capital Life Assc. Co Ltd
2 Bartley Way, Hook, Hants RG27 9XA 0256 768888

	Bid Price	Offer Price	+ or -	Yield Gross
UK Equity Acc	225.7	238.1	-0.4	-
UK Fixed Int Acc	172.1	181.6	+0.1	-
Intl Equities Acc	181.8	191.8	-0.9	-
UK Managed Acc	173.9	183.4	-0.3	-
Property Acc	224.4	236.8	---	-
Money Acc	129.1	136.2	+0.1	-
Special Market Acc	138.5	146.1	+0.1	-
Japan Equity Acc	104.2	110.0	-1.7	-
North American Acc	110.2	116.3	-0.4	-
Pacific Acc	96.6	102.0	-0.6	-
Technology Acc	122.0	128.7	+1.3	-
Nat Resources Acc	61.3	64.7	+0.3	-
European Acc	104.1	109.9	-0.6	-
Residential Prop Acc	96.2	101.5	---	-
Swiss Equities Acc	35.6	37.6	-0.3	-
Hong Kong Acc	64.9	68.5	-0.1	-
UK High Int Eq Acc	73.4	77.5	-0.5	-
Int Fixed Interest Acc	56.6	59.8	+0.1	-
Int Managed Acc	57.6	60.7	-0.4	-
HIP Managed Acc	116.9	123.3	-0.1	-
HIP Managed II Acc	99.8	105.2	-0.3	-
HIP Managed III Acc	106.4	112.2	-0.1	-
Total Investment Bond				
UK Equity Initial		153.7	-0.2	-
KK Fixed Int Initial		117.4	---	-
Intl Equities Initial		123.1	-0.6	-
UK Managed Initial		118.6	-0.3	-
Property Initial		134.2	---	-
Money Initial		88.5	+0.1	-

OFFSHORE INSURANCES

MANAGEMENT SERVICES

OFFSHORE AND OVERSEAS

BERMUDA (SIB RECOGNISED)

CANADA (SIB RECOGNISED)

GUERNSEY (SIB RECOGNISED)

GUERNSEY (REGULATED)

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IRELAND (SIB RECOGNISED)

IRELAND (REGULATED)(**)

ISLE OF MAN (SIB RECOGNISED)

ISLE OF MAN (REGULATED)(**)

JERSEY (SIB RECOGNISED)

JERSEY (REGULATED)(**)

LUXEMBOURG (SIB RECOGNISED)

LUXEMBOURG (REGULATED)(**)

SWITZERLAND (SIB RECOGNISED)

OTHER OFFSHORE FUNDS

Xiphias International Investment Fd Ltd

Xiphias Int USD	$1.0568		......	-
Xiphias Int ECU	Ecu2.0587		...	-

MANAGED FUNDS NOTES

Prices are in pence unless otherwise indicated and those designated $ with no prefix refer to U.S. dollars. Yields % allow for all buying expenses. Prices of certain older insurance linked plans subject to capital gains tax on sales. h Distribution free of UK taxes. 4 Periodic premium insurance plans. 4 Single premium insurance. a Designated in Luxembourg as a UCITS (Undertakings for Collective Investment in Transferable Securities). 4 Offered price includes all expenses except agent's commission. z Previous day's price. M Guernsey gross. # Suspended. ♦ Yield before Jersey tax. † Ex-subdivision. ‡‡ Only available to charitable bodies. 4 Yield column shows annualised rates of NAV increase after dividend.
(**) Funds not SIB recognised. The regulatory authorities for these funds are Guernsey Financial Services Commission, Ireland: Central Bank of Ireland; Isle of Man Financial Supervision Commission, Jersey Commercial Relations Department; Luxembourg Institut Monétaire Luxembourgeois.

CURRENCIES, MONEY AND CAPITAL MARKETS

FOREIGN EXCHANGES

Intervention halts dollar

CONCERTED interventioo by central banks hrought the US dollar's recent upsurge to a halt yesterday.

The immediate caose of the dollar's advance was the larger-than-expected rise io May employment, reported on Friday. For the first time in just under a year, non-farm payroll employment rose, prompting hopes that the economic downturn may be at an end.

Supported hy encouraging noises on the economy and on ioterest rates from Federal Bank governors, the currency markets are now anticipating an increase in dollar asset purchases hy international fund managers.

However, any hopes that Friday's rally would cootinue was quashed early on yesterday as the Bank of Japan sold around $200m for yen. This was followed when European markets opened with selling by at least eight central banks.

One unusual feature of the interventioo was that the central banks were not exclusively selling dollars for Deutschemarks. "This shows the intervention was more concerned with dollar strength than D-Mark weakness," said Mr David Cocker of Chemical Bank.

But the central banks did not succeed in driving the dollar much below Friday's closing levels. Many currency analysts say the oext key level against the D-Mark is DM1.7840, last touched six weeks ago.

With buyers willing to step in if the dollar slips back, the US currency appears to be well supported before another important set of economic statistics. May US prodncer prices released on Thursday will give an indication on whether inflationary pressures have been contained, while on Friday industrial production and capacity utilisation figures for May will be studied for further confirmation of economic recovery.

The dollar closed yesterday at DM1.7700 from DM1.7715; at SFr1.5120 from SFr1.5180; at FFr5.9925 from FFr5.9975. The dollar's index rose to 67.7, np 0.3.

Speculation about a reduction in Japanese interest rates and the decline in Tokyo share prices weakened the yen. Economists believe a cut in Japanese rates is possible later this month as the monetary authorities respond to slower economic conditiona. The dollar closed higher at Y141.90 against Y140.30.

Talk that the Bundesbank may raise interest rates at its policy-setting council meeting on Thuraday bolstered the D-Mark, particularly against the yen. However, with rates across Europe still falling and the German economy showing signs of slowing, economists believe an early rise in German rates is unlikely.

Sterling was slightly lower as speculation grew about a cut in interest rates later this week. Sterling closed lower at $1.6700 from $1.6715; at DM2.9550 from DM2.9600; at FFr10.0075 from FFr10.0250; but rose to Y236.95 from Y234.50. Sterling's index closed 0.1 lower at 90.8.

£ IN NEW YORK

June 10	Latest	Previous Close
£ Spot	1.6670-1.6680	1.6705-1.6715
1 month	0.74-0.72pm	0.75-0.74pm
3 months	2.01-1.98pm	2.05-2.03pm
12 months	5.70-5.60pm	5.80-5.70pm

Forward premiums and discounts apply to the US dollar

STERLING INDEX

	June 10	Previous
8.30 am	90.8	90.9
9.00 am	90.9	90.9
10.00 am	90.9	90.9
11.00 am	90.9	91.0
Noon	90.8	90.9
1.00 pm	90.8	90.9
2.00 pm	90.8	90.9
3.00 pm	90.9	90.9
4.00 pm	90.8	91.0

CURRENCY MOVEMENTS

Jun 10	Bank of England Index	Morgan* Guaranty Changes %
Sterling	90.8	-20.5
U.S Dollar	67.7	-11.1
Canadian Dollar	106.3	+3.3
Austrian Schilling	108.6	+10.9
Belgian Franc	189.9	-3.1
Danish Krone	107.8	+2.6
D-Mark	115.8	+22.7
Swiss Franc	110.9	+19.3
Dutch Guilder	112.5	+14.8

EMS EUROPEAN CURRENCY UNIT RATES

	Ecu Central Rates	Currency Amounts Against Ecu Jun 10	% Change from Central Rate	% Spread vs Weakest Currency	Divergence Indicator
Spanish Peseta	133.631	127.261	-4.77	6.16	85
Italian Lira	1538.24	1526.77	-0.73	1.86	44
Belgian Franc	42.4032	42.3464	-0.13	1.24	14
Sterling	0.696904	0.696807	-0.01	1.11	-1
Danish Krone	7.84195	7.90516	0.81	0.29	-30
Dutch Guilder	2.31643	2.31909	0.11	0.98	2
D-Mark	2.05586	2.05858	0.13	0.97	1
Irish Punt	0.767417	0.768978	0.20	0.90	-2
French Franc	6.89509	6.97097	1.10	0.00	-52

Ecu central rates set by the European Commission. Currencies are in descending relative strength. Percentage changes are for Ecu; a positive change denotes a weak currency. Divergence shows the ratio between two spreads: the percentage difference between the actual market and Ecu central rates for a currency, and the maximum permitted percentage deviation of the currency's market rate from its Ecu central rate.
Adjustment calculated by Financial Times.

POUND SPOT - FORWARD AGAINST THE POUND

DOLLAR SPOT - FORWARD AGAINST THE DOLLAR

EURO-CURRENCY INTEREST RATES

Long term Eurodollars: two years 7¼-7⅛ per cent; three years 8-7⅞ per cent; four years 8⅛-8⅞ per cent; five years 8⅜-8¼ per cent nominal. Short term rates are call for US Dollars and Japanese Yen; others, two days' notice

EXCHANGE CROSS RATES

June.10	£	$	DM	Yen	F Fr.	S Fr.	H Fl.	Lira	C$	B Fr.	ECU
£	1	1.670	2.955	236.9	10.01	2.525	3.330	2193	1.913	60.80	1.435
$	0.599	1	1.769	141.9	5.994	1.512	1.994	1313	1.146	36.41	0.859
DM	0.338	0.565	1	80.17	3.387	0.854	1.127	742.1	0.647	20.58	0.486
YEN	4.221	7.049	12.47	1000.	42.25	10.66	14.06	9257	8.075	256.6	6.057
F Fr.	0.999	1.668	2.952	236.7	10.	2.522	3.327	2191	1.911	60.74	1.434
S Fr.	0.396	0.661	1.170	93.82	3.964	1	1.319	868.5	0.758	24.08	0.568
H Fl.	0.300	0.502	0.887	71.14	3.006	0.758	1	658.6	0.574	18.26	0.431
Lira	0.456	0.762	1.347	108.0	4.565	1.151	1.518	1000.	0.872	27.72	0.654
C $	0.523	0.873	1.545	123.8	5.233	1.320	1.741	1146	1	31.78	0.750
B Fr.	t 645	2.747	4.860	389.6	16.46	4.153	5.477	3607	3.146	100.	2.360
ECU	0.697	1.164	2.059	165.1	6.976	1.760	2.321	1528	1.333	42.37	1

Yen per 1,000: French Fr. per 10: Lira per 1,000: Belgian Fr per 100.

FINANCIAL FUTURES AND OPTIONS

MONEY MARKETS

Rate hopes grow

LONDON MONEY market rates eased yesterday as hopes hegan to grow that interest rates may soon be cut hy a further ½ percentage point to 11 per cent.

The greatest optimism over lower rates was in the futures market, where the gilt and short sterling contracts posted modest gains. In the money markets, there was a slight easing in rates, but dealers remained cautious.

UK deht futures took support from the latest Confederation of British Industry survey noting that pay settlementa in manufacturing industry were showing their biggest decline for more than a decade.

The slower rise in wage settlements encouraged some City economists to believe that there oow is a greater chance of interest rates being cut later this week. The government has stressed tbat further reductions in rates are dependeot upon an easing in inflationary pressures.

May's inflation figures will be published on Friday and the anoual retail price index is expected to decline to 5.9 per cent from 6.4 per cent. This could be the opportunity for an easing of monetary policy without undermining sterling's position within the Exchange Rate Mechanism, say some economists.

Gilt futures finished nearly ½ point higher, while June short sterling was up 4 points at 88.91 or discounting an almost ½ point cut in rates hy the end of this month.

Money market dealers were less certain about the prospects for an early rate cut. The Bank of England's signal last Friday that it did not want a softening in rates still weighs on sentiment. More good economic news is needed before the market becomes convinced that rates could be cut, particularly with German rates hardening.

In the cash market yesterday, rates were softer, with three-months money down $\frac{1}{16}$ point at 11$\frac{1}{16}$-$\frac{1}{16}$ per cent. Twelve months money shed $\frac{1}{16}$ point to 10$\frac{11}{16}$-$\frac{11}{16}$ per cent.

The Bank of England was able to meet the market's liquidity needs without rates coming under pressure. The forecast sbortage of £1.05bo was met with an injection of £1.49bn by way of Treasury bill purchases.

In New York the Federal Reserve, as expected, injected $2bn into tbe US money markets using customer repurchase agraements. Federal funds at the time of the operations were unchanged at 5¾ per cent.

UK clearing bank base lending rate
11.5 per cent
from May 24, 1991

FT LONDON INTERBANK FIXING

MONEY RATES

LONDON MONEY RATES

BASE LENDING RATES

Banque Belge Ltd	12	● Guinness Mahon	11.5	● United Bk of Kuwait	11.5
Barclays Bank	11.5	● Hambros Bank	11.5	Unity Trust Bank Plc	11.5
Benchmark Bank	11.5	Hampshire Trust Plc	13.5	Western Trust	11.5
Brit Bk of Mid East	11.5	Heritable & Gen Inv Bnk	11.5	Westpac Bank Corp	11.5
● Brown Shipley	11.5	● Hill Samuel	11.5	Whiteaway Laidlaw	11.5
CL Bank Nederland	11.5	C. Hoare & Co.	11.5	Yorkshire Bank	11.5
Citibank NA	11.5	Hongkong & Shanghai	11.5		
City Merchants Bank	11.5	● Leopold Joseph & Sons	11.5		
Clydesdale Bank	11.5	Lloyds Bank	11.5		
		Meghraj Bank Ltd	11.5		

● Members of British Merchant Banking & Securities Houses Association.

COMPANY NOTICES

LEUMI INTERNATIONAL INVESTMENTS N.V.

LEGAL NOTICES

G WALKER AND SON (WASTE PAPER) LIMITED

CLUBS

ART GALLERIES

MONEY MARKET FUNDS

Money Market Trust Funds

Money Market Bank Accounts

JOTTER PAD

CROSSWORD

No.7,565 Set by FETTLER

ACROSS

1 Flaw produced when making piece from tin (12)
10 Prefer being in residence with particular type (7)
11 Look round corner for part of an office (7)
12 Old mate takes a long time to rejoice (5)
13 Keep pickle or jam (8)
15 Miserable day at canteen gate (10)
16 Rare Tory sportsman (4)
18 One provided by endless unity (4)
20 Stupefying liquid from loch or et sea (10)
22 Letting fall in pond, grip having slackened (8)
24 Left to acquire or gain knowledge (5)
26 Bruiting? No, I carol (7)
27 Dancing tango, is one engaged in a struggle? (7)
28 We hear expositress, teaching incorrectly (12)

DOWN

2 Wandering, tramping, penniless (7)
3 Demanding executive playing up (8)
4 Paid a price for provender (4)
5 Bond, or one hired to kill? (10)
6 Din cushioned is protecting ear bone (5)
7 Indifferent to time in nervous condition (7)
8 Cornucopian purse, distributed in profusion (13)
9 I end in doubt, end uncertain (13)
14 Mac, nnceremoniously hung, in East Lewis, perhaps (7-3)
17 Mere space, said to be the site of misspent youth (4,4)
19 Iconolatry is old, I'm recollecting (7)
21 Here's a novelty – pub's lacking cheers (7)
23 Couples in Paris, perhaps (5)
25 Folk song craze – there's nothing to it (4)

Solution to Puzzle No.7,564

BACKCHAT AGENDA
OUTRIGHT LANCET
CARTESIAN ENTER
FOOT ENHANCE
LOTTERY SITE
ALLOT BRASSIERE
APIARY FLORENCE
SINEWS TWOBYTWO

WORLD STOCK MARKETS

CANADA

TORONTO

3:15 pm prices June 10

INDICES

NEW YORK

DOW JONES	June 7	June 6	June 5	June 4	1991 HIGH	1991 LOW	Since compilation HIGH	Since compilation LOW
♦Industrials	2976.74	2994.86	3005.37	3027.95	3035.33 (3/6)	2470.30 (9/1)	3035.33 (3/6/91)	41.22 (2/7/32)
Home Bonds	94.34	94.65	94.67	94.88	95.09 (30/5)	91.30 (16/1)	95.51 (9/2/87)	54.99 (1/10/81)
Transport	1227.43	1238.01	1244.53	1251.76	1241.89 (3/6)	894.30 (7/1)	1532.01 (5/9/89)	12.32 (8/7/32)
Utilities	209.26	210.39	210.70	211.14	220.89 (16/4)	199.64 (16/1)	236.23 (2/1/90)	10.50 (8/4/32)

♦Day's High 3005.14 (3027.06) Low 2954.61 (2975.63)

STANDARD AND POOR'S	June 7	June 6	June 5	June 4	1991 HIGH	1991 LOW	Since compilation HIGH	Since compilation LOW
Composite ‡	379.44	383.63	385.09	387.74	390.45 (17/4)	311.49 (9/1)	390.45 (17/4/91)	4.40 (1/6/32)
Industrials	451.79	456.95	458.92	462.15	463.23 (18/4)	364.90 (9/1)	463.23 (18/4/91)	3.62 (21/6/32)
Financial	30.84	31.25	31.27	31.40	31.58 (18/4)	21.96 (9/1)	35.24 (9/10/89)	8.64 (1/10/74)
NYSE Composite	208.19	210.24	210.88	212.05	213.21 (17/4)	170.97 (9/1)	213.21 (17/4/91)	4.46 (25/4/42)
Amex Mkt. Value	369.98	371.43	372.27	372.12	373.40 (18/4)	296.72 (14/1)	397.03 (10/10/89)	29.31 (9/12/72)
NASDAQ Composite	498.54	502.94	505.20	507.25	511.31 (17/4)	355.75 (14/1)	511.31 (17/4/91)	54.87 (31/10/72)

	May 31	May 10	May 3	year ago (approx.)
Dow Industrial Div. Yield	2.99	3.14	3.44	3.92

	June 5	May 29	May 22	year ago (approx.)
S & P Industrial div. yield	2.73	2.74	2.79	2.89
S & P Indl. P/E ratio	19.34	19.24	18.89	16.75

NEW YORK ACTIVE STOCKS

Friday	Stocks traded	Closing price	Change on day
Nabisco (RJ)	3,600,400	10½	+ ¼
BankAmerica	3,201,600	38⅞	- ½
Pac G & E	3,021,200	25⅞	—
Pepsico	2,625,000	30¼	- ¼
Fst. Intrste	2,443,100	38½	- 2⅛
Time Warner	2,018,500	94⅝	- 4⅞
IBM	1,760,400	102	- 1
Syntex	1,707,200	36⅞	- 1⅝
Telefonos	1,620,000	27⅞	—
Sunshine Min	1,569,500	1¼	+ ⅛

TRADING ACTIVITY

† Volume Millions	June 7	June 6	June 5
New York	167.826	168.260	186.560
Amex	13.038	12.380	13.324
NASDAQ	145.817	161.529	158.311
Issues Traded	2,050	2,036	2,037
Rises	450	683	664
Falls	1,118	868	897
Unchanged	482	485	476
New Highs	50	69	107
New Lows	9	3	9

CANADA

TORONTO	Jun 7	Jun 6	Jun 5	Jun 4	1991 HIGH	1991 LOW
Metals & Minerals	3209.40	3234.16	3217.93	3216.41	3284.18 (5/3)	2632.06 (9/1)
Composite	3582.07	3576.87	3556.27	3549.59	3582.07 (7/6)	3161.95 (15/1)
MONTREAL Portfolio	1903.86	1898.82	1884.08	1879.04	1903.86 (7/6)	1686.89 (9/1)

Base values of all indices are 100 except NYSE All Common – 50; Standard and Poor's – 10; and Toronto Composite and Metals – 1000. Toronto indices based 1975 and Montreal Portfolio 4/1/83. † Excluding bonds. ‡ Industrial, plus Utilities, Financial and Transportation. (c) Closed. (u) Unavailable.

	June 10	June 7	June 6	June 5	1991 HIGH	1991 LOW
AUSTRALIA						
All Ordinaries (1/1/80)	(c)	1478.0	1495.3	1501.9	1558.3 (29/4)	1204.5 (16/1)
All Mining (1/1/80)	(c)	629.4	629.1	629.0	680.1 (29/4)	561.6 (16/1)
AUSTRIA						
Credit Aktien (30/12/84)	(u)	522.15	524.04	526.28	534.82 (16/4)	390.84 (15/1)
BELGIUM						
BEL20 (1/1/91)	1178.03	1184.31	1186.58	1182.32	1212.15 (17/4)	917.59 (17/1)
DENMARK						
Copenhagen SE (3/1/83)	(u)	359.19	356.33	(c)	359.19 (7/6)	302.26 (8/1)
FINLAND						
HEX General (28/12/90)	1066.4	1070.6	1071.7	1070.2	1186.9 (8/4)	890.5 (23/1)
FRANCE						
CAC General (31/12/82)	489.91	493.16	491.67	491.61	493.70 (9/4)	394.88 (15/1)
CAC 40 (31/12/87)	1846.25	1852.51	1863.92	1862.92	1865.66 (3/6)	1425.26 (15/1)
GERMANY						
FAZ Aktien (31/12/58)	711.26	714.65	715.14	713.89	715.14 (6/6)	570.48 (15/1)
Commerzbank (1/12/53)	2014.0	2025.8	2032.0	2028.5	2035.2 (31/5)	1612.5 (15/1)
DAX (30/12/87)	1704.92	1709.64	1704.17	1712.76	1712.76 (5/6)	1311.82 (16/1)
HONG KONG						
Hang Seng Bank (31/7/64)	3621.19	3637.77	3678.19	3690.01	3917.09 (28/5)	2984.01 (16/1)
IRELAND						
ISEQ Overall (4/1/88)	1422.13	1428.41	1435.99	1441.86	1520.65 (15/3)	1114.86 (25/1)
ITALY						
Banca Com. Ital. (1972)	(u)	607.14	608.59	613.01	619.38 (3/6)	486.26 (29/1)
JAPAN						
Nikkei (16/5/49)	24598.38	25035.11	24984.12	25289.57	27146.91 (18/3)	22442.70 (16/1)
Tokyo SE (Topix) (4/1/68)	1896.21	1922.49	1922.94	1934.28	2028.85 (18/3)	1625.00 (17/1)
2nd Section (4/1/68)	3253.34	3267.81	3239.21	3249.47	3423.45 (18/3)	2473.52 (24/1)
MALAYSIA						
KLSE Composite (4/4/86)	618.54	620.40	623.73	(c)	635.02 (29/5)	470.41 (16/1)
NETHERLANDS						
CBS Tt.Rtn.Gen (End 1983)	281.3	281.7	282.5	284.8	284.8 (5/6)	221.4 (16/1)
CBS All Shr (End 1983)	200.6	200.9	201.5	203.1	203.1 (5/6)	162.3 (16/1)
NORWAY						
Oslo SE (Ind) (2/1/83)	775.36	783.07	789.46	791.62	792.13 (4/6)	610.45 (21/1)
PHILIPPINES						
Manila Comp (2/1/85)	1146.54	1157.52	1142.82	1138.48	1183.40 (29/5)	582.64 (10/1)
SINGAPORE						
SES All-Singapore (2/4/75)	413.13	418.66	420.02	420.64	422.43 (26/4)	315.07 (16/1)
SOUTH AFRICA						
JSE Gold (28/9/78)	1417.84	1353.0	1304.0	1277.0	1417.0 (10/6)	971.0 (25/2)
JSE Industrial (28/9/78)	3684.06	3682.0	3670.0	3654.0	3684.0 (10/6)	2829.0 (16/1)
SOUTH KOREA**						
Korea Comp Ex. (4/1/80)	606.55	604.07	(c)	623.31	697.62 (4/1)	604.07 (7/6)
SPAIN						
Madrid SE (30/12/85)	285.85	284.82	287.50	288.26	289.22 (18/3)	213.70 (14/1)
SWEDEN						
Affarsvarlden Gen. (1/2/37)	1128.1	1131.5	1133.5	1130.7	1133.8 (5/6)	808.4 (8/1)
SWITZERLAND						
Swiss Bank Ind. (31/12/58)	757.7	761.7	761.5	764.0	766.1 (31/5)	590.4 (14/1)
SBC General (1/4/87)	630.3	633.3	633.5	636.3	638.0 (31/5)	487.1 (14/1)
TAIWAN**						
Weighted Price (30/6/66)	5852.63	5885.56	5695.71	5676.19	6305.22 (9/5)	3316.26 (16/1)
THAILAND						
Bangkok SET (30/4/75)	821.60	820.70	824.17	818.06	908.13 (19/4)	582.48 (16/1)
WORLD						
M.S. Capital Intl.(1/1/70) (S)	499.3*	503.6	508.3	510.4	529.2 (17/4)	439.1 (16/1)

**Saturday June 7: Taiwan Weighted Price: 5914.21 Korea Comp Ex. 605.60.

& Subject to official recalculation. *Calculated at 15.00 GMT.

Base values of all indices are 100 except: BEL20, HEX General, ISEQ Overall and DAX – 1,000, JSE Gold – 255.7, JSE 26 Industrials – 264.3 and Australia All Ordinary and Mining – 500; (c) Closed. (u) Unavailable.

TOKYO - Most Active Stocks

Monday 10 June 1991

	Stocks Traded	Closing Prices	Change on day
Japan Steel Wk.	4.6	615	-23
Nippon Steel	4.2	431	-16
Honshu Paper	3.1	1,070	-60
Nippon Oil	2.7	1,080	+30
Hitachi Zosen	2.7	653	-17
Kawasaki Steel	2.4	414	-15
Chiyoda	2.2	2,740	-70
Cosmo Oil	2.2	823	-22
NKK	1.9	399	-6
Mitsubishi Heavy	1.8	711	-9

Price data supplied by Telekurs.

NEW YORK STOCK EXCHANGE COMPOSITE PRICES

3:15 pm prices June 10

1991 High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
15⅞	6¼	AAR Corp	0.48	0.03	13	75	14⅛	14	14⅛	+⅛
18¾	14½	A L Labs A x	0.16	0.01	16	212	16⅛	16⅛	16¼	-⅛
55½	40⅞	AMP Inc	1.44	0.03	20	581	54	53½	53¾	-¼
68⅝	44¼	AMR				192548	65⅛	60⅞	65½	+⅛
2⅝	1⅛	ARX			1	22	1¾	1⅞	1⅞	
21⅛	41½	ASA	3.50	0.07	14	1670	u51⅛	50¾	51	+1⅛
54	39¼	Abbott Lab	1.28	0.07	21	3569	49½	48¾	49	-½
14½	9⅞	Abitibi Pr	0.50	0.04	27	6	14⅛	14⅛	14⅛	+⅛
11⅝	10⅞	ACM Gvl In x	1.26	0.11		526	11⅝	11⅛	11⅝	-⅛
9¾	9¼	ACM GvOpp x	1.01	0.11		15	9⅞	9¾	9⅝	
9¼	8¾	ACM Gvt Sp x	1.01	0.11		378	9⅛	9	9⅛	+½
11	9⅞	ACM Gvt Se	1.26	0.12		390	u11	10⅞	10⅞	-⅛
8⅞	7⅝	ACM Man x	1.01	0.12		227	8¼	8½	8⅛	
13⅞	11⅞	ACM Mangd x	1.37	0.11		282	12⅛	12⅛	12⅛	-⅛
7½	4¾	Acme Cleve	0.40	0.06	16	105	7⅛	6⅞	7⅛	+⅛
6	3½	Acme Elect			49	28	4⅞	4⅛	4⅞	+⅛
40	22¾	Acuson			22	372	33⅞	31⅛	31¾	-⅞
18⅛	14¼	Adams Expr	0.12	0.04	0	12	16⅞	16⅛	16⅛	-½
26⅛	16⅞	Adobe12Pf	2.40	0.12		37	19⅝	19½	19⅛	+⅛
9¼	7	Adobe Res			23	62	8	7⅝	8	+⅛
28⅛	18	Ad Micro				76	27¾	27⅛	27⅛	-⅛
14¼	4⅛	Ad Micro P	3.00	0.23	14	3639	13¼	13⅞	13⅛	+⅞
6½	2¼	Advest Grp	0.19	0.04	6	43	4⅛	4¼	4¼	-⅛
49⅛	33⅞	Aetna Ll	2.76	0.07	6	993	41⅛	41⅝	41⅛	-¼
10½	6⅝	AfB A	0.24	0.28	36	387	9⅛	9	9⅛	-⅛
20¼	12	Ahmanson	0.03	0.06	11	1218	16⅛	16½	16	-⅛
9⅛	2⅞	Aileen Inc			12	288	9½	9	9¼	
74⅛	31⅞	Air Pr Chm			16	652	72¾	71⅛	71½	
26½	14⅝	Airbne Frt	0.30	0.01	12	302	25½	25¼	25½	+¼
18⅞	12½	Airgas Inc			73	2	13⅝	15⅝	16½	
16¼	10	Airlease	2.28	0.18	6	29	13	12⅞	13	+⅛
24	88¼	AlaPw8.16 x				z120	92	92	92½	+½
24⅞	21⅞	AlaPw PfA x	2.00	0.03		39	24⅛	24⅝	24⅛	+⅛
104½	100	AlaPw9.44 x				2	103¼	103	103	-½
108	102⅞	Alab Pw 11				2	104	104	104	

Continued on next page

NYSE COMPOSITE PRICES

Continued from previous page

Price data supplied by Telekurs.

Sales figures are unofficial. Yearly highs and lows reflect the previous 52 weeks plus the current week, but not the latest trading day. Where a split or stock dividend amounting to 20 percent or more has been paid, the year's high-only range and dividend are shown for the new stock only. Unless otherwise noted, rates of dividend are annual disbursements based on the latest declaration.

a-dividend also xtra(s). b-annual rate of dividend plus stock dividend. c-liquidating dividend. cld-called. d-new yearly low. e-dividend declared or paid in preceding 12 months. g-dividend in Canadian funds, subject to 15% non-residence tax. i-dividend declared after split-up or stock dividend. j-dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting. k-dividend declared or paid this year, an accumulative issue with dividends in arrears. n-new issue in the past 52 weeks. The high-low range begins with the start of trading. nd-next day delivery. P/E price-earnings ratio. r-dividend declared or paid in preceding 12 months, plus stock dividend. s-stock split. Dividends begin with date of split. sls-sales. t-dividend paid in stock in preceding 12 months, estimated cash value on ex-dividend or ex-distribution date. u-new yearly high. v-trading halted. vi-in bankruptcy or receivership or being reorganised under the Bankruptcy Act, or securities assumed by such companies. wd-distributed. wi-when issued. ww-with warrants. x-ex-dividend or ex-rights. xdis-ex-distribution. xw-without warrants. y-ex-dividend and sales in full. yld-yield. z-sales in full.

AMEX COMPOSITE PRICES

3:00 pm prices June 10

NASDAQ NATIONAL MARKET

3:15 pm prices June 10

AMERICA

Volume sinks as Gulf parade seizes attention

Wall Street

SHARE PRICES idled in a narrow range yesterday morning in an unusually quiet session, as a large number of market participants took time off from trading to watch the huge ticker tape parade for Gulf war heroes which passed by Wall Street around midday, *writes Patrick Harverson in New York.*

At 1.30 pm the Dow Jones Industrial Average was 2.91 higher at 2,979.65. The more broadly based Standard & Poor's 500 was slightly weaker, down 0.59 at 378.84 at 1 pm, while the Nasdaq composite fell 1.96 to 496.58. Turnover on the New York Stock Exchange was exceptionally light, reaching 76m shares by 1 pm. Declines outnumbered rises by 900 to 548.

Among individual stocks Unisys slipped $¼ to $4 on the news that the computer company is expected to pay $190m to settle a Pentagon fraud case. It was also revealed that Unisys plans to sell its Timeplex unit for $207m.

The news that General Motors' European division had reported a rise in the carmaker's share of the European market to 12.1 per cent in the first four months of 1991, against 11.1 per cent in 1990, gave the stock an early boost. But the shares dropped back with the market, and by early afternoon were trading down $⅛ at $41⅛.

Other carmakers were also weaker at midsession, with Chrysler down $¼ at $13⅞ and Ford $⅛ lower at $34⅞. All three stocks had been bought actively in recent weeks on the hopes that earnings would recover quickly as the economy moved out of recession.

Procter & Gamble rose $¼ to $83 on the news that Mr B Jurgen Hintz, the company's vice president, is resigning and that a reorganisation of its domestic businesses will be undertaken as a result.

Occidental climbed $⅝ to $22 on reports that China is willing to buy out the oil company's stake in the $750m An Tai Bao coal mine.

First Interstate slipped $¼ to $37⅞ in active trading after the banking group told investors last week that a slowdown in earnings and scrutiny by bank examiners would lead to a review of dividend policy.

Live Entertainment, the music distributor, jumped $1⅝ to $11¾ on the news that it is willing to negotiate some form of business link with Carolco Pictures, up $⅛ at $7½.

IBM rose $¼ to $102¼ on turnover of ½m shares on reports that the company is in talks with Apple Computer about establishing a technology alliance. Apple shares were up $¾ at $46⅞ in active trading on the over-the-counter market.

Elsewhere on the secondary market Xoma slumped $5⅛ to $22¾ on volume of 2m shares as the market anticipated what might be an unfavourable review of its Xomazyme CD5 Plus drug from the Food and Drug Administration panel.

In the retail sector Rose's Stores advanced $⅜ to $3¾ after the company said it had reached an agreement with lenders for an $82m working capital facility. A profits warning from Citation Insurance prompted a $2¼ drop in the share price to $8¼. The insurer said that its second-quarter results were likely to be below market expectations.

Canada

THERE WAS a slight fall in Toronto share prices by midday in moderate trading, as many investors took profits after last week's sharp gains. The gold sector showed strength, after bullion futures jumped.

The composite index lost 10.6 to 3,571.6. Declines led advances 90 to 84 on volume of 14.9m shares. Among gold shares, Placer Dome rose C$¼ to C$15¾, American Barrick firmed C$⅛ to C$25⅛, Hemlo Gold added C$⅛ to C$10⅜ and Cambior gained C$⅝ to C$10⅛.

Canadian Pacific eased C$⅜ to C$19⅝. The company said that it would cut its quarterly dividend to 16 cents a share from 23 cents.

EUROPE

Volvo takes the limelight as Continent consolidates

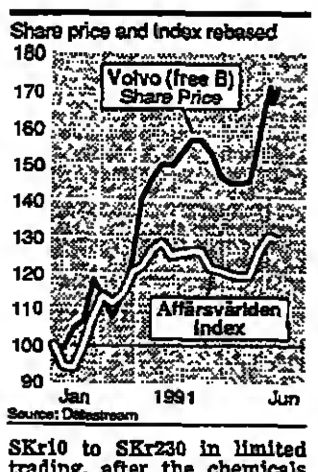
THE CONTINENT started the week on an easier note as markets consolidated recent gains. No official prices were set in Milan, owing to a one-day strike by stockbrokers protesting at planned reforms. Lisbon was shut for a holiday, *writes Our Markets Staff.*

STOCKHOLM moved lower, with the exception of Volvo, which saw its free B shares rise SKr9 to SKr353, near its year's high. The car company is due to present its new 800 models today.

Analysts said the share, which has been recommended by several brokers in the last month, had been sought by international investors seeking recovery plays. The Affärsvärlden General index fell 3.4 to 1,128.1 in turnover of SKr303m, down from SKr450m.

The market was weaker in line with other bourses. But analysts said that it had been underpinned by the prospect of an early inflow of cash, after the Swiss-based Tetra Pak said that it now had 95.4 per cent of the shares – with 97.7 per cent of the votes – in Alfa-Laval, the dairy equipment manufacturer. Last month the European Commission lifted its suspension on Tetra Pak's SKr16bn bid for Alfa Laval.

Free B shares in Perstorp fell SKr10 to SKr230 in limited trading, after the chemicals and surface materials group reported a 39 per cent decline in pre-tax profits for the eight months to the end of April.



Source: Datastream

FT-SE Eurotrack 100 - Jun 10							
Hourly changes							
Open	10 am	11 am	Noon	1 pm	2 pm	3 pm	Close
1151.16	1152.00	1152.26	1152.87	1153.34	1153.44	1154.24	1155.46
Day's High 1155.75				Day's Low 1150.85			
June 7	June 6	June 5	June 4	June 3			
1156.31	1160.15	1165.54	1155.53	1162.11			

Base value 1000 (26/10/90)

FRANKFURT lost impetus, volume falling from DM6.9bn to DM5.4bn. Sentiment was weakened by a united Germany trade gap of DM1.4bn in April, the first deficit since August 1981, after a March surplus of DM2.8bn.

There was an argument later that the April trade gap reflects the strength in German demand and weakness elsewhere in Europe. Equities staged an intraday recovery and the DAX index closed only 4.72 lower at 1,704.92 after a low of 1,693.22, and a fall of 3.39 to 711.26 in the FAZ at midsession.

However, the trade figures did not enhance the prospect for interest rates, and the bond market continued to edge lower with the Bundesbank's average bond yield rising from 8.48 to 8.49 per cent. Bank shares, in consequence, were relatively weak, with Bayerische Vereinsbank DM6 lower at DM398.50. According to Mr Christopher Davis, banking analyst at Barclays de Zoete Wedd, the two big Bavarian banks have a lot of mortgage business, and are notably sensitive to interest rates.

Utilities, another interest rate-sensitive sector, were also relatively weak, led down by a DM3 fall to DM365.80 in Veba.

The good news, once again, came from electricals and steels. Electricals have been relatively weak this year, but yesterday Varta rose DM5 to DM351 and Siemens put on another DM4.40 to DM664.90 in turnover of DM1.18bn, a remarkable 22 per cent of the day's total business.

Steels were led by Thyssen, DM5.80 better at DM240 after favourable reports from UK analysts. Among smaller companies the baby food maker, Altana, was prominent again, rising DM12.50 to DM592 for a two-day gain of DM31.

PARIS ended lower after moving within a narrow, eight-point range, as investors continued to rue the absence of an interest rate cut. The CAC 40 index fell 6.26 to 1,846.25 in modest turnover, after Friday's moderate FFr2.04bn.

Suez, the financial holding company, edged up 60 centimes to FFr360.40, while UAP, the state-controlled insurer, shed FFr12 to FFr556. Both groups were said to be discussing a reshuffle of their holdings in Victoire, the insurer.

Scoa's active streak continued, as it fell FFr1.70 or 5.8 per cent on profit-taking to close at FFr27.60, with 727,200 shares traded. The trading house had risen 38 per cent between May 28 and last Friday.

Elf Aquitaine was steady at FFr373. The company said it planned to issue up to 8m new shares at FFr348 each.

MADRID rose in moderate turnover similar to Friday's Pta15.3bn. The general index gained 1.03 to 285.85 as investors anticipated tomorrow's inflation figure for May, which is expected to be flat or rise by up to 0.4 percentage points.

Banco Santander, which announced a Pta40bn convertible bond issue, rose Pta10 to Pta5,500.

In the utility sector, Hidrola and Iberduero, the merger partners which were requoted on Friday, were active, with the former rising Pta4 to Pta586 on 1.9m shares, and the latter recouping Pta3 of Friday's Pta38 loss to close at Pta697 on 683,003 shares.

Construction stocks were firm, with Urbis rising Pta75 or 4.1 per cent to Pta1,890.

ZURICH eased in light volume, the Crédit Suisse index losing 2.1 to 547.3. Adia, the employment agency company, saw its bearers fall SFr20 to SFr800 after it forecast lower 1991 profits and a sharply reduced, or even passed, dividend payment for the year.

Ciba-Geigy topped the active list as its registered shares fell SFr30 to SFr2,650, in spite of talk from dealers of buying interest on the firm dollar.

OSLO eased overall, but banking shares rose after the finance ministry said that it would allow tax-free investments of some business profits in the sector.

The all-share index fell 2.77 to 517.16, but the bank index gained 4.68 or 6.2 per cent to 79.57 in moderate turnover of NKr232m. Den norske Bank rose NKr7.5 to NKr83.5.

BRUSSELS closed mixed in quiet trading. The Bel20 index slipped 5.48 to 1,178.83 in modest turnover of BFr598m.

Growing fears of higher interest rates sent Electrabel, the electricity utility, down BFr25 to BFr4,500 in the most active trading of the day.

AMSTERDAM closed slightly higher thanks to a stronger dollar, after drifting through a dull session. The CBS Tendency index finished 0.2 up at 94.9.

ASIA PACIFIC

Nikkei falls 1.7% as yen eases and interest rates rise

Tokyo

A SHARP fall in the yen, firm short-term interest rates, fears of arbitrage-related selling and rumours of a large speculative group's bankruptcy shaved 1.7 per cent off the Nikkei average yesterday, *writes Emiko Terazono in Tokyo.*

The Nikkei ended 436.73 down at the day's low of 24,598.38, falling through a psychological support line of 24,800, the 200-day moving average. The index opened at the day's high of 25,001.08.

Volume fell to 200m shares from 250m. Losses overwhelmed gains by 836 to 119, with 153 issues unchanged. The Topix index of all first-section stocks fell 13.67 to 3,253.34 but, in London trading, the ISE/Nikkei 50 index rose 0.47 to close at 1407.07.

The yen closed Y1.78 weaker against the dollar at Y141.17, wiping out hopes of monetary easing by the central bank. The unsecured overnight call rate firmed to 8.09 per cent.

"There seem to be no positive incentives in the market and volumes are expected to be low for the next three or four days," said Ms Caroline Stons at Barclays de Zoete Wedd. Mr Dan Kerrigan at County NatWest pointed out, however, that investors were not panicking and some were waiting to buy at lower levels. "The limit on the downside should be about 24,500," he said.

Speculative stocks fell on rumours of a leading speculator's bankruptcy, with debts totalling about Y700bn. Honshu Paper fell Y60 to Y1,070 and Janome Sewing Machine lost Y25 to Y785.

Nippon Telegraph and Telephone fell Y5,000 to the year's low of Y878,000. Interest rate-sensitive, large-capital issues fell on the diminishing prospects of an interest rate cut. Nippon Steel retreated Y10 to Y431, falling for the sixth consecutive session, while NKK lost Y6 to Y399, below its support level of Y400.

Construction issues fell on selling by investment trusts. Shimizu shed Y40 to Y1,380 and Obayashi dropped Y30 to Y1,050.

Electric machineries also lost ground, with Pioneer Electronic losing Y40 to the year's low of Y3,870. Traders said that investment trusts were replacing electrical issues with over-the-counter stocks. Sony fell Y140 to Y5,960.

Japan Steel Works, the most active issue of the day, fell Y23 to Y815. Investors who had bought the issue in short-term trading were seen liquidating their holdings.

Kyndenko, the electric cables and wires company, was unchanged at Y2,490. The issue had risen to an all-time high of Y2,520 on Friday on a brisk earnings forecast, thanks to capital investment by electrical power companies.

In Osaka the OSE average fell 111.03 to 27,576.92 on volume of 23m shares, down from 27m. Nintendo, the video game maker, set a new low for the year, losing Y300 to Y12,800.

Roundup

PACIFIC RIM markets eased yesterday, with the notable exception of New Zealand which recouped part of Friday's sharp losses. Australia was closed for the Queen's Birthday.

SINGAPORE followed international markets lower. The Straits Times Industrial index fell 20.56 to 1,529.62 in volume of 31m shares, down from 38m.

UIC, which was requoted after Friday's suspension, fell 7 cents to S$1.19 in the day's most active trading of 8.65m shares. The stock exchange has rejected the property company's plans for a rights issue.

NEW ZEALAND firmed in quiet trading, as investors awaited the details, due today, of the Telecom Corp flotation. The Barclays index rose 4.05 to 1,448.90 in thin trading worth NZ$5.6m, down from NZ$15.9m.

Carter Holt Harvey, which dropped 23 cents on Friday on news of a rights issue, regained 4 cents to NZ$1.56.

HONG KONG fell but finished above its day's low. The Hang Seng index lost 16.58 to 3,621.19, in the lightest turnover since late January of HK$787m, down from HK$1bn.

MANILA was depressed after the fall in Philippine Long Distance Telephone's (PLDT) share price in New York on Friday. The composite index lost 10.98 to 1,146.54, and PLDT shed 7.50 pesos to 602.50 pesos.

JAKARTA also declined, with the index falling 4.65 to 391.93, while TAIWAN's weighted index dropped 61.58 to 5,852.63 in moderate turnover of T$41.7bn, down from Saturday's T$49bn.

SOUTH AFRICA

A HIGHER bullion price lifted Johannesburg gold shares yesterday. The all-gold index rose 64 or 4.7 per cent to a year's high of 1,417, and the industrials added 2 to a record 3,684. Vaal Reefs gained R10 to R233 and Soovaal rose R7 to R95.

UK counters weaker US and Japan

MARKETS IN PERSPECTIVE

	% change in local currency †				% change sterling †	% change in US $ †
	1 Week	4 Weeks	1 Year	Start of 1991	Start of 1991	Start of 1991
Austria	+1.72	+2.03	−15.62	+16.27	+16.68	+1.05
Belgium	+0.18	−1.45	−10.06	+16.37	+14.41	−0.92
Denmark	+1.79	+3.12	−1.43	+20.29	+16.09	+2.28
Finland	+1.37	+2.66	−13.16	+27.12	+27.63	+10.54
France	+0.06	−0.37	−11.58	+20.55	+18.07	+2.25
Germany	−0.07	+4.36	−8.17	+16.95	+15.93	+0.39
Ireland	+1.74	−0.27	−14.25	+21.51	+16.39	+3.40
Italy	−0.36	+5.82	−21.93	+17.72	+16.86	+1.20
Netherlands	−0.42	−0.61	+2.37	+20.65	+16.01	+2.22
Norway	+0.56	−0.19	−10.90	+15.26	+13.47	−1.72
Spain	−0.45	+0.28	+2.11	+27.53	+28.67	+11.43
Sweden	+1.41	+8.94	−8.51	+33.98	+36.86	+18.53
Switzerland	−0.85	+3.44	−4.86	+23.71	+16.98	+3.61
UK	+0.32	−1.09	+4.14	+16.69	+16.69	+1.07
EUROPE	+0.09	+0.76	−3.76	+18.95	+17.70	+1.98
Australia	−2.45	−5.11	−0.43	+16.40	+30.67	+13.35
Hong Kong	−1.46	−2.21	+15.61	+23.46	+43.72	+24.47
Japan	−2.34	−3.19	−20.06	+10.76	+23.65	+7.09
Malaysia	−1.29	+3.69	+4.02	+15.06	+29.59	+12.23
New Zealand	−4.23	−8.59	−24.70	+13.03	+28.58	+11.33
Singapore	+0.65	+2.07	−4.39	+31.61	+48.70	+28.79
Canada	+0.85	+2.53	−0.13	+6.09	+26.27	+9.36
USA	−2.55	+1.02	+4.66	+15.32	+33.15	+15.32
Mexico	+3.97	+11.28	+111.41	+87.35	+112.05	+83.65
South Africa	+3.34	+7.99	−0.68	+17.25	+38.15	+18.64
WORLD INDEX	−1.67	−0.45	−6.43	+14.85	+26.06	+8.18

† Based on June 7th 1991. Copyright, The Financial Times Limited, Goldman, Sachs & Co. and County NatWest Securities Ltd

By *Antonia Sharpe*

A STEADY performance in the UK helped limit the impact of Wall Street and Tokyo on the FT-Actuaries World Index last week. The index fell 1.7 per cent, although excluding the US or Japan, it fell 1.2 and 1.8 per cent respectively. Excluding the UK, it would have lost 1.9 per cent.

A reassessment was on the cards after Wall Street scaled new heights last week, and many European bourses attained new highs for 1991. "A pause in the global equity market advance can be expected," says Goldman Sachs International. The broker warns that equities worldwide have moved ahead of bonds and that, in the US and Japan, shares are now overvalued against bonds.

However, it says that Europe appears undervalued relative to the US. "The European dividend yield is about 20 per cent above the US dividend yield while, historically, the yields have been essentially comparable," the broker says.

The near-term outlook for Japan, which fell 2.3 per cent on low volume last week, is uninspiring. "The expiration of the June futures contract will result in the market remaining depressed this week. Investors will be unlikely to buy aggressively until the potential of large index-related selling disappears," says Nomura International.

The week's best performer was Mexico, which rose 3.9 per cent in local currency terms, in heavy volume of about $135m a day as local investors bought bank shares ahead of the privatisation of state-owned institutions. Foreigners, who are prohibited from buying bank shares, committed new funds to the bolsa last week, encouraged by progress on the North American Free Trade Agreement. One analyst warns that there is a fine balance between the fresh inflow from abroad and profit-taking by existing foreign investors.

New Zealand saw the week's greatest fall, losing 4.2 per cent on Friday's news of a big rights issue from Carter Holt Harvey, a market leader.

FT-ACTUARIES WORLD INDICES

Jointly compiled by The Financial Times Limited, Goldman, Sachs & Co., and County NatWest/Wood Mackenzie in conjunction with the Institute of Actuaries and the Faculty of Actuaries

NATIONAL AND REGIONAL MARKETS	FRIDAY JUNE 7 1991							THURSDAY JUNE 6 1991					DOLLAR INDEX		
Figures in parentheses show number of lines of stock	US Dollar Index	Day's Change %	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	Local % chg on day	Gross Div. Yield	US Dollar Index	Pound Sterling Index	Yen Index	DM Index	Local Currency Index	1991 High	1991 Low	Year ago (approx)
Australia (70)	133.81	−1.8	118.69	118.67	123.24	118.50	−1.4	5.52	135.93	119.39	116.57	123.89	120.18	147.30	112.74	137.69
Austria (20)	198.71	−0.9	176.25	176.23	183.01	182.45	+0.0	1.48	200.50	176.10	176.36	182.73	182.62	222.37	167.00	245.19
Belgium (49)	131.01	−1.2	116.21	116.18	120.66	117.44	−0.2	5.03	132.54	116.41	116.57	120.79	117.87	151.20	121.73	152.06
Canada (115)	142.20	+0.0	126.13	126.10	130.96	118.11	+0.0	3.32	142.27	124.96	125.13	129.65	118.11	142.27	126.49	137.91
Denmark (37)	237.93	−0.3	211.04	211.01	216.13	218.89	+0.7	1.54	238.72	209.67	209.98	217.56	218.28	270.56	217.74	253.53
Finland (18)	114.01	−0.8	101.12	101.11	105.00	99.74	−0.2	2.27	114.88	100.90	101.06	104.70	99.91	125.15	90.61	138.61
France (114)	134.72	−1.5	116.50	118.47	124.07	128.75	−0.5	3.48	136.77	120.13	120.30	124.64	127.39	152.28	121.85	157.98
Germany (65)	112.34	−1.1	99.65	99.64	103.46	103.46	+0.0	2.18	113.55	99.73	99.89	103.49	103.49	125.35	102.43	127.77
Hong Kong (55)	151.62	−1.0	134.48	134.46	139.64	150.59	−1.1	5.15	153.15	134.52	134.71	139.59	152.21	161.77	118.62	131.33
Ireland (16)	153.51	−1.8	136.16	136.15	141.38	143.01	−0.7	3.57	156.01	137.02	137.22	142.18	144.05	182.46	162.88	187.08
Italy (77)	79.25	−1.3	70.30	70.28	72.99	77.66	−0.3	2.98	80.31	70.54	70.64	73.18	77.93	88.23	72.05	106.76
Japan (474)	133.61	−0.9	118.51	116.49	123.07	116.49	−0.1	0.71	134.80	118.39	116.56	122.87	118.56	146.97	118.35	151.58
Malaysia (68)	238.09	−0.1	211.18	211.14	219.27	253.81	−0.1	2.56	238.40	209.39	209.69	217.27	254.20	247.76	192.83	234.69
Mexico (15)	1073.35	−0.8	952.04	951.91	988.55	3535.30	+0.1	1.82	1079.72	948.33	949.71	984.04	3532.10	—	634.45	540.17
Netherland (31)	136.94	−1.3	121.46	121.44	126.12	124.82	−0.3	4.35	138.69	121.81	121.99	126.40	124.99	145.73	125.70	139.06
New Zealand (13)	48.33	−4.2	42.87	42.87	44.52	44.32	−4.0	7.97	50.46	44.32	44.39	45.99	46.18	54.64	41.18	64.14
Norway (32)	200.75	−1.8	178.06	178.04	184.89	167.94	−0.8	1.66	204.42	179.54	179.80	186.30	169.48	223.24	182.24	237.38
Singapore (38)	205.12	−0.3	181.94	181.81	166.81	167.93	−0.2	1.99	205.82	180.78	181.04	187.58	168.31	208.25	151.63	207.93
South Africa (61)	216.81	+2.1	194.06	194.05	201.52	159.70	+1.0	3.43	214.22	188.15	188.42	195.23	158.19	221.93	173.00	183.26
Spain (55)	156.36	−2.1	138.69	138.66	144.01	129.53	−1.0	4.12	159.67	140.24	140.45	145.52	130.88	171.12	131.51	158.80
Sweden (27)	189.00	−1.7	167.64	167.62	174.08	177.86	−0.7	2.49	192.27	168.88	169.12	175.24	179.16	204.12	146.60	215.54
Switzerland (58)	92.41	−1.1	81.97	81.96	85.12	86.97	+0.0	2.21	93.41	82.04	82.17	85.14	87.01	100.87	82.17	101.86
United Kingdom (239)	167.44	−1.6	148.51	148.48	154.20	148.51	−0.7	4.94	170.22	149.50	149.71	155.12	149.50	187.44	156.27	161.34
USA (525)	153.73	−1.0	136.38	136.35	141.60	153.73	−1.0	3.18	155.26	136.37	136.57	141.51	155.26	158.24	125.95	145.13
Europe (838)	137.13	−1.4	121.63	121.62	126.30	124.15	−0.4	3.83	139.13	122.20	122.38	126.81	124.70	151.52	125.50	146.05
Nordic (112)	182.05	−1.1	161.47	161.45	167.67	163.27	−0.1	1.97	184.11	161.70	161.84	167.79	163.45	200.81	155.55	204.60
Pacific Basin (718)	133.98	−0.9	118.84	118.83	123.40	118.27	−0.2	1.07	135.21	118.75	118.93	123.23	119.45	145.82	117.88	150.29
Euro−Pacific (1556)	135.57	−1.1	120.24	120.22	124.85	122.08	−0.3	2.18	137.10	120.42	120.58	124.95	122.42	147.66	121.29	148.96
North America (640)	152.93	−0.8	135.64	135.64	140.67	151.34	−0.9	3.17	154.37	135.58	135.79	140.71	152.76	157.04	125.91	144.59
Europe Ex. UK (599)	118.54	−1.3	105.14	105.15	109.20	109.82	−0.3	3.05	120.10	105.49	105.66	109.48	110.15	129.80	106.85	135.31
Pacific Ex. Japan (244)	137.20	−1.2	121.70	121.70	126.38	124.29	−1.1	4.72	138.61	121.92	122.12	126.52	125.65	145.66	111.40	134.10
World Ex. US (1747)	137.18	−1.0	121.66	121.65	126.33	123.12	−0.2	2.24	138.58	121.72	121.91	126.31	123.42	148.18	122.32	149.15
World Ex. UK (2033)	139.25	−0.6	123.52	123.51	128.27	131.06	−0.5	2.31	140.57	123.47	123.66	128.13	131.71	145.77	120.06	145.16
World Ex. So. Af. (2211)	141.25	−1.0	125.29	125.28	130.10	132.54	−0.5	2.56	142.74	125.37	125.57	130.10	133.24	148.86	122.92	146.36
World Ex. Japan (1798)	147.37	−1.1	130.71	130.71	135.75	140.39	−0.7	3.48	148.96	130.84	131.04	135.78	141.42	152.83	126.89	145.45
The World Index (2272)	141.73	−1.0	125.71	125.70	130.54	132.76	−0.5	2.57	143.17	125.75	125.94	130.49	133.44	149.01	123.28	146.58

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Latest prices were unavailable for this edition. Constituent change with effect 11/6/91: Deletion: Alfa-Laval (Sweden).

THE BUSINESS SECTION ALSO APPEARS ON PAGES 12, 13, 14 & 27 TODAY

FINANCIAL TIMES SURVEY

Manufacturers braced for turbulent future; Wider focus on jumbos — Page 2

AEROSPACE

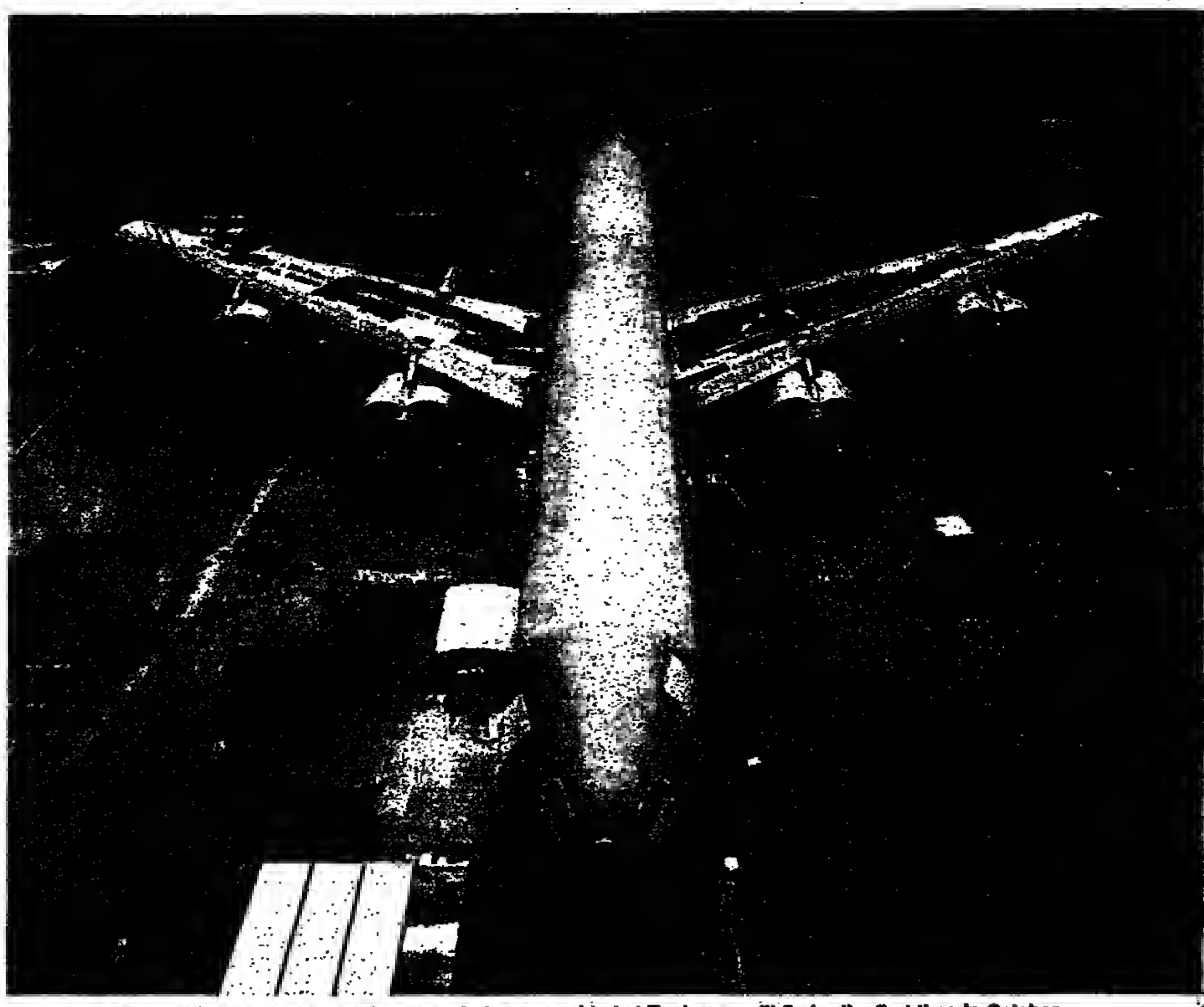
Television coverage of war puts arms on show in living-rooms — Page 4

SECTION III

Tuesday June 11 1991

For the first time in its highly cyclical history, the industry is having to adjust to a slump in both its commercial and defence sectors. Paul Betts looks at prospects after cuts in defence spending and the recession and concludes that the outlook continues to be bleak

On a wing and a prayer



The new Airbus A340 long-distance airliner, now being assembled at Toulouse, will fly for the first time in October

THE superimposition of the Gulf war, economic recession and the decline in government defence spending has left the aerospace industry in a state of shock as it assembles this week for the Paris Air Show, *its biggest showcase.*

For the first time in its highly cyclical history, the industry has been forced to adjust to s slump in both its commercial and defence sectors. For the first time too, tbere are no signs that the recovery in the commercial side will be as swift and sharp as after previous downturns. The outlook looks even bleaker for defence companies since the *Gulf war has done little to* alter the underlying trend of long-term reductions in government defence expenditures.

The Gulf war is expected to lead to some changes in defence priorities, but these are unlikely to arrest the overall decline of the defence sector. The emphasis is now likely to be placed on more flexible weapons and greater battlefield mobility. The Gulf war was also s proving ground for smart weapons and stealth technology — one of the successes was the Lockheed F117A stealth aircraft, which is expected to be on display at this week's show in Paris.

The Gulf war had a devastating effect on the airline industry. Even before hostilities in the Middle East, airlines were alresdy under pressure because of the combination of *high fuel prices and the eco*nomic downturn in many western markets depressing air travel. But the Gulf war at the beginning of this year triggered, in the words of Mr Bernard Attali, tbe Air France chairman, "the worst crisis in the airline industry since the Second World War".

Airline profits have been savaged. Even strong carriers such as BA, American Airlines, and *Lufthansa, are operating* under severe strain. Airlines lost a total of $2bn in the first quarter of this year when traffic collapsed by around 25 per cent compared with the year before. The post-Gulf war recovery in air travel has been patchy. The industry does not expect any sustained recovery until much later this year or early next year at best.

Tbe financial problems of airlines has accelerated the general trend of consolidation in the industry. Weaker carriers are fighting for survival; some, like Pan American or Continental Airlines in the US, *have been forced to seek pro*tection from creditors by filing under Chapter 11 of the US bankruptcy law; others, like Air Europe and Eastern, have collapsed altogether.

In turn, these problems have fed through to airline suppliers in the aerospace industry, already struggling to adjust to the reductions in government defence spending following the end of the Cold War. Aero-engine manufacturers such as Rolls-Royce, General Electric and Pratt & Whitney have been among the first to be hit. Their revenues from the sale of spare parts to airlines have fallen *sharply as carriers fly less and* aircraft are grounded. The airframe manufacturers, despite their bulging backlog of aircraft orders, are also worried. "The longer the malaise occurs, the higher the risk," acknowledges Mr Frank Shrontz, the chairman of Boeing, the world's biggest manufacturer of commercial jets.

But Boeing, like the rest of the industry, remains confident over the long-term growth prospects for the commercial side of the business. "I am cautiously optimistic we will weather this period in relatively good shape. There will *be no boom in the coming few* years; but in the next 15 years we are in a robust growth industry," Mr Shrontz says.

In its latest market outlook — regarded by many as the industry's "bible" — Boeing expects 8,850 new commercial aircraft worth $617bn to be delivered to airlines during the next 15 years. Even though air travel growth could be as low as 1 per cent this year, Boeing is forecasting air travel growth to average 5.2 per cent a year between now and 2005.

On the demand side, airlines will require s total of $423bn worth of new aircraft to meet the expected growth in air travel over the next 15 years. On the supply side, another $200bn worth of new [illegible] will also be required by airlines to replace the older jets.

Airbus, Boeing's [illegible] commercial aircraft rival, [illegible] shares this long-term [illegible]. Mr Jean Pierson, the [illegible] managing director, says he expects some 12,300 aircraft worth $680bn to be delivered to the world's airlines between now and 2010.

Although there is agreement that commercial aerospace will continue to show long-term growth, the problem facing *manufacturers is* where the airlines are going to find money to finance new aircraft commitments. With the banking industry showing little enthusiasm for aircraft financing, the manufacturers are *likely to have to help finance* new aircraft sales much more. Mr Shrontz of Boeing believes commercial aircraft remain attractive high value assets. But he also acknowledges the market will ultimately determine what role manufacturers will play in future aircraft financing.

The consolidation of the airline industry coupled with the sector's financial problems has heightened the already cut-throat competition in the civil market. In turn, this has brought to a head again the five-year-old dispute between the US and the European Commission over government subsidies for Airbus. The US has complained that Airbus has been unfairly subsidised by European governments. Now that the European consortium has reached maturity and achieved last year its first operating surplus in its 20-year history, the US feels the time has come to end Airbus subsidies. "Enough is enough", says Mr Shrontz.

After the latest round of negotiations between the US and the EC failed to produce a satisfactory compromise, the US decided to file a complaint with the subsidies committee of the General Agreement on Tariffs and Trade (Gatt) against the German government's exchange rate support scheme for Daimler-Benz, the German partner in Airbus. Washington is now planning to file a second and much broader complaint in the Gatt against direct government subsidies for new Airbus programmes.

Airbus and the EC have rejected the charges and complained that US manufacturers have long benefited from indirect government support. Brussels recently made clear that "no effort will be spared to defend the legitimate interests of the Community in this sector". Mr Pierson has also suggested the latest US onslaught against Airbus coincides with the increasing success of the European consortium to increase its market share.

IN THIS SURVEY

Editorial production: Roy Terry

The commercial airline industry is going through its worst crisis in 40 years, writes **Paul Betts**

Leading manufacturers are braced for a turbulent future

THE commercial airline industry is going through its worst crisis in 40 years. But in spite of the severe difficulties of the airline business, the commercial aircraft makers remain confident that longer-term growth will continue to be vigorous in the civil jet market.

"The financial position of airlines remains bleak," conceded Mr Frank Shrontz, the chairman of Boeing, the world's biggest manufacturer of commercial jets. "But we continue to see growth in air travel in the longer term," he added.

In its latest forecast of the civil aircraft market, Boeing expects a total of 8.850 oew aircraft worth $617bn to be delivered to airlines during the next 15 years. This is about 360 fewer aircraft and $13bn less than the Seattle company was forecasting last year.

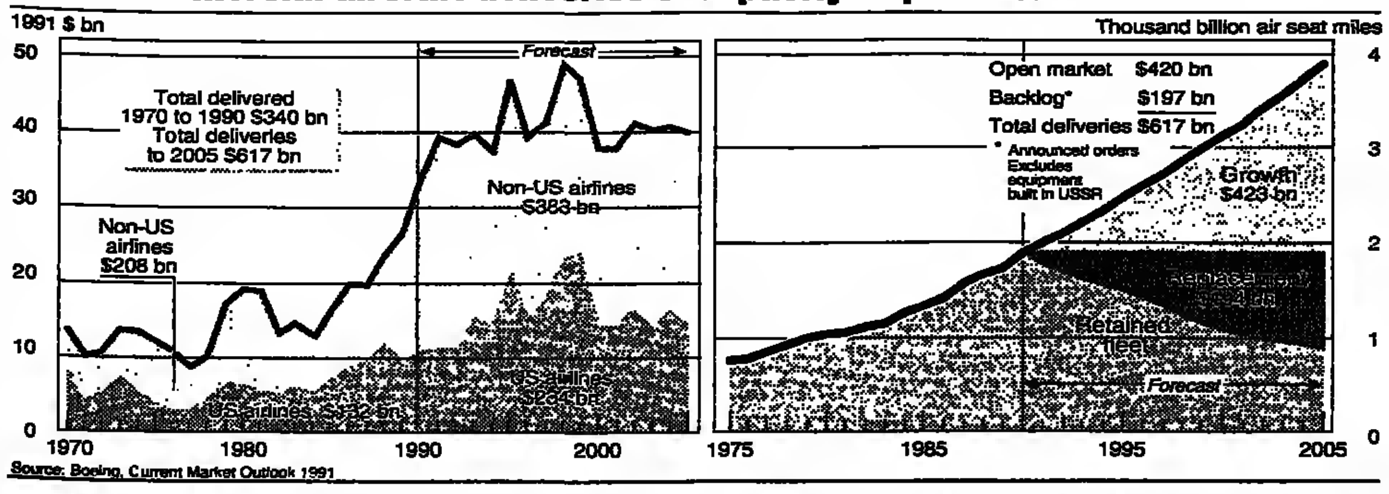
Airbus, Boeing's European rival, also shares Boeing's optimistic view of the industry's longer-term prospects. Mr Jean Pierson, the Airbus managing director, recently said Airbus was sticking to its forecast that air traffic worldwide would grow by more than 5 per cent a year during the next 20 years. "This means that by 2010 some 12,300 aircraft could have been delivered to the world's airlines. This is worth a staggering $680bn worth of business of which Airbus firmly inteods to capture over a third," he said.

But in the short term, the three leading manufacturers – Boeing, Airbus and McDonnell Douglas – have all braced themselves for turbulence in the market. Strapped for cash, many of their airline customers have asked for new jet deliveries to be deferred. Some airlines have dropped some options on new aircraft orders. Others, in dire financial difficulties, risk cancelling firm orders.

As a late cycle business, aerospace has traditionally felt the impact of recession and recovery several months after other sectors. This implies that even if air travel does pick up later this year, the manufacturers are still likely to feel well into next year the repercussions of the Gulf war travel slump compounded by the economic recession in many important western markets.

Frank Shrontz: bleak financial position for airlines

World commercial aircraft deliveries & capacity requirement



Source: Boeing, Current Market Outlook 1991

In spite of the uncertainties and immediate pressures, Boeing expects air travel growth to average 5.2 per cent a year during the next 15 years. Aircraft worth $423bn will be required to meet this growth. On the more pessimistic assumption that travel growth could shrink to 4.5 per cent or even 3.5 per cent a year, new aircraft demand could then fall to $330bn or as low as $237bn.

But this does not include the large demand for replacement aircraft, which is expected to remain firm whatever the depth of the crisis. Between now and 2005, some 3,300 to 6,500 older aircraft will be retired, according to Boeing. Following the surge of the 1960s in jet deliveries, Boeing expects retirements of old aircraft to average 350 a year between now and 1995.

After that, retirements will be lower averaging 270 jets a year because fewer aircraft were delivered during the recessionary periods of the 1970s.

The manufacturers acknowledge that the rate of new aircraft orders will decline sharply during the next three years from the records of the past few years. Indeed, with air travel growth averaging more than 7 per cent a year during the 1980s, new aircraft orders reached a peak of $96bn in 1989. The manufacturers won a further $81bn worth of new jet orders last year.

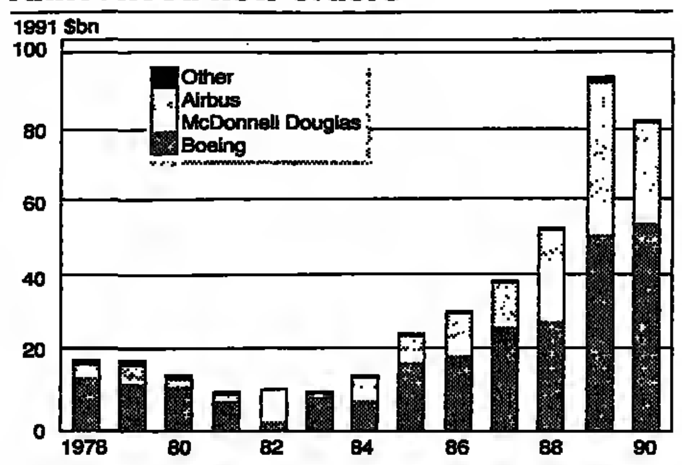
In volume terms, the past three years saw airlines and aircraft leasing companies ordering more than 1,000 new jets a year. Now, the industry expects orders to tumble to around 200-300 new jets a year between 1993 and 1995. Even without the present recessionary environment, new orders were bound to drop from their peaks of the late 1980s.

However, while new jet orders are expected to fall, the industry sees total deliveries of new aircraft staying relatively stable at around 600-700 jets a year. In its forecast, Boeing expects new aircraft deliveries to peak at around 855 jets worth more than $50bn this year compared with 664 jet deliveries worth about $40bn last year. Boeing subsequently sees deliveries averaging about 600 aircraft worth $41bn a year during the next 15 years. Airbus also believes orders will pick up again in 1995, reaching a peak of 800 jets a year at the end of the decade.

In contrast to the optimistic longer-term view of the large aerospace manufacturers, the financial community has turned increasingly bearish in recent months about the industry's prospects. They are concerned that the recovery this time round will not be as sharp as in previous cyclical upturns. Many analysts now argue that there is nothing automatic nor inevitable about a strong recovery in air travel in the short term at least.

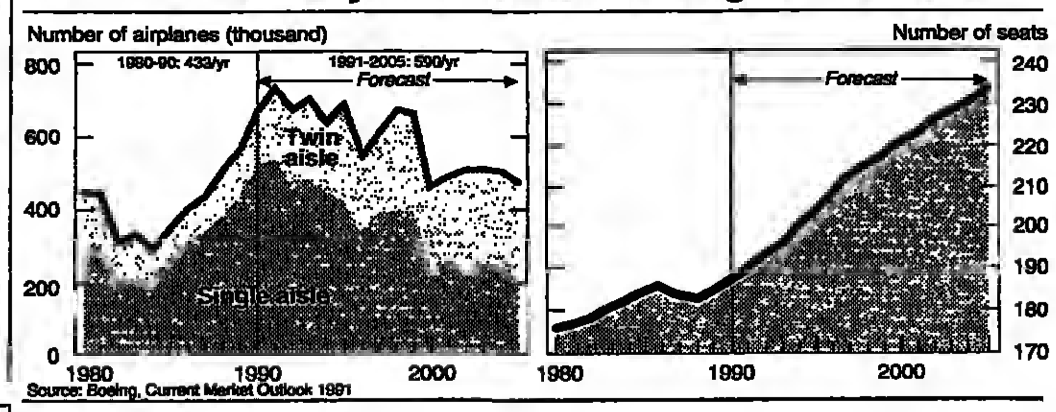
With most airlines reporting large financial losses and some of the weakest ones being forced out of business, there is growing concern about the future financing of new aircraft purchases. The capital sums required are enormous and the availability of credit for aircraft financing has tightened dramatically in the last few months. Banks, which once enthused about lending to the commercial aircraft industry, are now showing growing reluctance to finance big aircraft deals.

Announced new orders



Mr Shrontz of Boeing agreed that the industry had entered an inevitable period of adjustment. "But the demand for air travel is out there, and I think financing will be available to meet the requirements," he emphasised. The pace of consolidation would accelerate in the airline business, and for Boeing that was not necessarily a bad thing. Indeed, Mr Shrontz suggested the industry as a whole would be better off with fewer and stronger airlines which could compete efficiently rather than with a host of smaller, weaker players. In any event, what really mattered at the end of the day for Boeing and the rest of the industry "is people travelling and filling aircraft seats", the Boeing chairman remarked.

World commercial jet deliveries & average aircraft size



Source: Boeing, Current Market Outlook 1991

Programmes for large commercial aircraft

A much wider focus for new jumbo-sized jets

AT BOEING'S vast Renton complex outside Seattle there is a new life-size mock-up of the company's latest offering: the 777 wide-bodied twin-engined airliner. Behind the conventional mock-up used to show airline customers the interior of the new aircraft, there is a much more interesting mock-up.

It consists of a mock-up of the interior of not only the 777, but of the Boeing aircraft's main rivals: the Airbus A330/A340 and the McDonnell Douglas MD-11. Potential customers first enter the 777 fuselage then walk into the MD-11 and finally into the A330/340. As they walk down the mock-up's aisle, they cannot help noticing that the fuselage becomes steadily narrower.

The Boeing mock-up reflects the intense competition between the three leading commercial aircraft manufacturers to woo airlines to select their new wide-bodied jets. All three are betting heavily on this new market which they expect will account for an increasing share of the overall commercial airliner market during the next 10 to 15 years.

Of the three, Boeing, the world's largest manufacturer of commercial jets, entered the race for the wide-bodied market last. The Seattle group only launched its new $3bn-$4bn programme to develop the 777 last October after clinching a big launch order from United Airlines followed two months later by another order from All Nippon Airways (ANA). By contrast, McDonnell Douglas is already delivering to its customers its new MD-11 three-engined jet and the new Airbus A340 will make its maiden flight next October with Lufthansa taking delivery of the first aircraft next year.

"If you are later than the others, you have to have something extra to offer," said a Boeing official during a visit of the 777 mock-ups. "I've never been worried about not being first in the market," added Mr Philip Condit, the head of the 777 programme. "It's more important to get the right product. You are talking about a very long product cycle and the first couple of years are not crucial," he explained.

Boeing believes its new aircraft will eventually have a big impact on the market. Mr Frank Shrontz, the company's chairman, conceded that the company was disappointed not to have won more initial orders for the new aircraft. This largely reflected the state of the airline market with carriers reluctant to take on heavy new commitments at this stage. Airlines, he said, were still uncertain about the timing and strength of the post-Gulf war recovery in air travel.

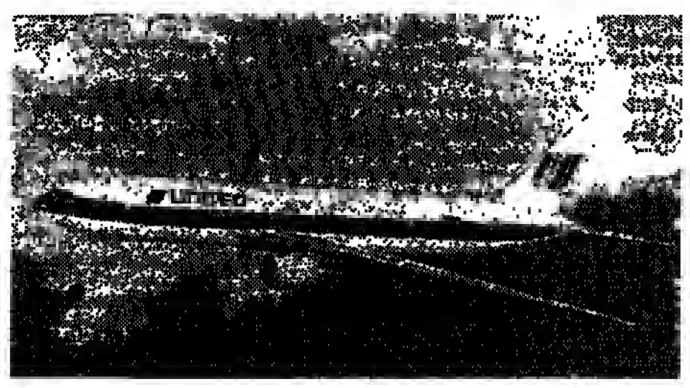
But in the longer term, Boeing and its two rivals expect the market for larger aircraft to predominate. In its latest market outlook, Boeing says 85 per cent of all aircraft seats delivered between 1996 and 2005 will involve airliners with more than 170 seats. In the shorter term, airlines will also be seeking to replace older aircraft like the McDonnell Douglas DC10 or the Lockheed L1011 with new aircraft such as the 777, the A330/A340 and the MD-11.

Apart from the steady growth of long-distance air travel, larger aircraft are also regarded as providing an important solution to the problems of congestion at busy airports. Many leading airports are already full and it will take several years before the necessary investments are completed to expand airport capacity. Even then, these new investments are widely expected to lag the general growth in air travel demand during the next 10 years. Larger aircraft will thus become an increasingly significant part of airline fleets.

Moreover, the new larger jets being developed are all breaking new ground in technology and aircraft manufacturing. Boeing is now following Airbus in introducing "fly-by-wire" computer controls for the primary and secondary control systems for the 777. Boeing is also offering an option to buy the 777 with folding wing tips by adapting military aircraft technology. The idea is to enable airlines to use the 777 with its longer wing at the same crowded airport gates used by DC-10 and L1011 jets.

All these different aircraft also form part of developing families of airlines which will lead to new larger derivatives of the 777, the A330/A340 and the MD-11. Boeing, for example, is already planning to stretch the initial version of the 777 to increase its capacity from between 375-400 passengers to 415-440 passengers.

McDonnell Douglas is actively seeking partners to develop a bigger version of the MD-11 called the MD-12X. For its part, Airbus is soon expected to launch the development of a stretched version of its A330, its new twin-engined wide-bodied jet which is part of the same programme as the A340, its four-engined sister aircraft. The Airbus executive board has already approved this year additional studies on new versions of the A330 and the A340. The developments include longer-range versions of the two sister aircraft.



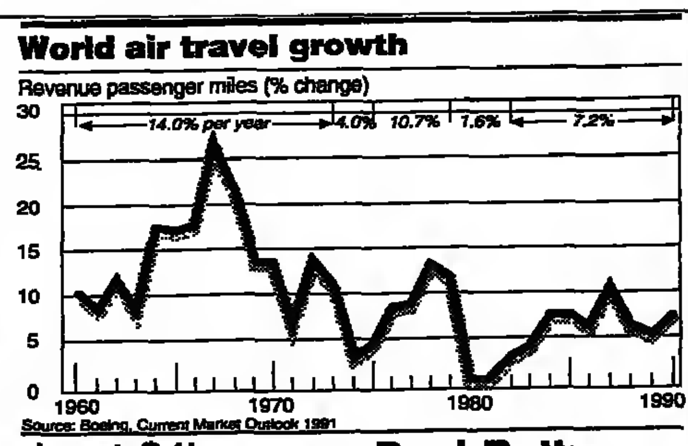
Artist's impression of the planned Boeing 777

Mr Jean Pierson, the Airbus chairman, has also indicated that the European consortium is now considering challenging Boeing's well-established dominance of the jumbo jet market by developing an extra large airliner, the so-called A350. "Over the horizon, by the year 2000, with the 700-seater plus aircraft which we are studying presently, we will be taking them (Boeing) head-on in this market segment," Mr Pierson said in a recent lecture.

But Boeing also has plans to build an even larger 747 jumbo to consolidate its position. "We expect a good opportunity to emerge for the development of a bigger 747 for 600-700 passengers," Boeing's Mr Condit said, adding that the Seattle group had already started work on drawings for an even bigger jumbo. At the end of the day these second-generation programmes to build even larger airliners will be dictated by the market place.

Paul Betts

McDonnell Douglas MD-11 takes off on a test flight



In six months, international airlines have lost about $4bn, says **Paul Betts**

Pan Am is symbol of brutal times

STANLEY KUBRICK, the American film director, predicted in his remarkable science fiction film "2001: A Space Odyssey" that Pan Am would be running in 10 years' time a regular space shnttle service.

His prediction is unlikely to be realised. Far from operating such an avant-gard service, Pan Am is fighting for its life and has recently abandoned its lucrative London-Heathrow routes, which it sold this year for $290m to United Airlines.

Once a *proud symbol of* success in international aviation, Pan Am has become one of the principal victims of the crisis afflicting the world airline industry. It is among four US carriers which have sought protection from its creditors under Chapter 11 of the US bankruptcy code. More than any other airline, Pan Am has come to symbolise the hrutal recession which has hit the industry during the past six *months.*

The International Air Transport Association (IATA) and its 200 member airlines havs described the situation as "the worst crisis in civil aviation since the Second World War". In the past six months, international airlines have lost a total of about $4hn. Even though there are signs of a pick-up in airline traffic, expectations of a sharp recovery similar to those which followed previous downturns remain slim.

No other industry has been savaged so fast by the combined effects of the Gulf conflict and the economic recession in several leading western markets. During the Gulf war, airlines flew half-empty aircraft around the world. They are not expecting any radical improvement until later this year. Sir Colin Marshall, British Airways' chief executive, recently warned there was not much possibility of returning to pre-Gulf war traffic levels before this autumn.

The industry is now expecting passenger *air travsl* demand to grow by around 1 to 3 per cent at best this year compared with last year. Before the Gulf war, the forecast was for around 7 per cent.

The crisis has prompted sweeping restructures and job losses in tha industry. Airlines have been forced to cut capital costs, deferred new aircraft deliveries, reduced flight frequencies and snspended unprofitable routes. To lure *passengers back to their air*craft, airlines are now engaged in a fierce fares war. This is likely to put further pressure on already depressed margins.

Airlines have also been clamouring for government support to help them weather the storm. In Europe, carriers have asked the European Commission to intervene by reducing red tape to give airlines greater flexibility to change fares and reducecapacity. They are also anxious to halt any new EC regulations which could further increase their costs. Bnt although the Commission has responded sympathetically to the indnstry's plight, it has made clear it will not abandon its airline liberalisation programme designed to inject greater competition in European skies.

The dire financial state of several carriers in the US has also prompted the American anthorities to adopt a more flexible approach to the controversial qnestion of foreign investment in the industry. *The US government has now* agreed to allow foreigns to hold unlimited debt and up to 49 per cent of the equity of a US carrier, although foreign investors are still restricted to 25 per cent of a US carrier's voting stock.

The crisis is also accelerating the trend toward greater concentration in the industry. In the US, most industry analysts believe only three or possibly four airlines have s guaranteed *future. The stronger* will becoma stronger while the weaker will either be absorbed by the stronger carriers or disappear. At the beginning of tha crisis, Mr Jean Pierson, the chairman of the Airbus aircraft consortium, warned: "Many airlines will go into a state of coma; those already in a coma will be liquidated."

Concentration has also continued in Europe. Air France, for example, has absorbed Air Inter and UTA, two other French carriers, while BA is steel seeking to forge a strategic alliance with Sabena, the Belgian flag carrier. Airlines have also continued to seek strategic alliances with other carriers to form powerful new partnerships to compete on a global level.

The airlines havs been unable to do little about the economic recession and the Gulf conflict, the latter compounded hy a worldwide scare of terrorism, which has had sevsre repercussions on air travel in the first quarter of *this year*. But *many* In the industry believe that the crisis was waiting to happen, and to some extent was of the airlines' own making.

During the past few years, the industry indulged in unprecedented expansion. A total of 3,746 commercial jets were on order at the end of last year. In 1990 alone, airlines placed orders for a staggering 1,237 aircraft. Many analysts believe that experience should *have warned* the *industry* of the troubles ahead.

Air transport has traditionally been a sensitive barometer of economic activity, turning down very quickly in a recession to recover just as swiftly with the first signs of an upturn. It has also tended to follow a 10-year cycle, with declines in the early seventies, again in the early eighties, and now, once more, in the early nineties. Bnt airlines, this time, appeared to ignore early warning signals of the deteriorating economic situation and the traditional cyclical nature of their business.

Confident that the underlying trend of strong demand for air travel would continue unabated, in spite of some short-term dips in the rate of growth, they expanded too rapidly. As the recession struck with unexpected speed and violence, tha industry was caught short with too much capacity. The US was the first to feel the squeeze, but airlines in other markets were soon also hit by the *combination* of the slowdown and the sharp rise in jet fuel prices.

Most sstimates still expect air travel to grow by around 5.75 per cent a year during the next 10 years. But this longer term outlook will not resolve the immediate financial problems of the industry.

As Mr Robert Crandall, the chairman of American Airlines, recently remarked: "The situation has improved. We've *gone from dreadful* to horrible."

But even without the recession and the Gulf war, the industry's breakneck expansion of the eighties was leading it into trouble. As airlines continued to put more capacity on the market, the increasingly chronic problems of congestion in the skies and on the ground at airports began to make their mark.

These prohlems now risk clipping the wings of any longer term recovery in the business.

The regional jet market

An acrimonious fight for dominance

THE commercial aerospace industry has been shaken in recent months by an increasingly scrimonious contest for dominance in the regional and commuter aircraft market.

Although this market is set to grow during the next 10 years with the development of regional and commuter airline services, its size is unlikely to be large enough to accommodate all the contestants.

Competition is already fierce in the large airliner market where there are only three players: Boeing and McDonnell Douglas in the US and the Airbus consortium in Europe. By contrast, there are many more competitors in the regional and commuter jet business vying *for a viable slice of a smaller* market. Moreover, Boeing and McDonnell Douglas are also present at the upper end of the market with their smaller B-737 and MD80 jets.

But while the industry had been expecting a greater degree of concentration and rationalisation, the last few months have seen more projects sppear on the market. The competition has been particularly intense in the 80-seat to 130-seat regional jet market segment with most of the leading European aircraft manufacturers developing new aircraft or larger derivatives of their existing product ranges.

Recent market studies have identified a requirement of between 2,000 and 2,600 new aircraft in the 80- to 130-seat range over the next 10 years. But this is regarded as still not large enough to provide a suffi*cient volume of business for* the different manufacturers in this crowded market.

Moreover, the present battle over the 130-seater airliner now risks splitting Europe's aerospace industry down the middle and imposing additional strains on the Airbus consortium. At the root of the problem is the ambition of the Daimler-Benz group to create a strong German aerospace industry concentrated aronnd its new Deutsche Aerospace (Dasa) subsidiary.

Dasa has earmarked the development of a new 130-seater regional jet as the cornerstone of its commercial aerospace strategy. The German company sees the project as giving it the opportunity to graduate from its traditional role as a sub-contractor into a fully-fledged aerospace prodncer.

*The German group had origi*nally discussed co-operating on a new regional jet with British Aerospace. But the talks broke down because BAe concluded the development of a new regional jet was not viable and proposed co-operating on developing a larger derivative of its 146 regional jet family.

Dasa subsequently turned to Aerospatiale of France and Alenia of Italy. The three companies agreed to form a joint venture, of which Dasa would initially own half, to develop a 130-seater aircraft and take over responsibility for the sales and marketing of the three companies' smaller aircraft.

BAe's initial response to the German move was to announce plans to develop a rival aircraft based on the 146 with other international partners. This would involve building an enlarged twin-engine version of the four-engine 146 with at least two international partners investing in about 50 per cent of the project between them. But BAe then shifted its position and started arguing in favour of the development of a new *130-seater* by the Airbus consortium, of which BAe is a member along with Aerospatiale, Dasa and Casa of Spain.

Airhus has already conducted preliminary studies into extending its model range downwards into smaller aircraft. This would not only enable Airbus to expand its aircraft family, but also offer competing products at the lower end of the airliner market against Boeing and McDonnell *Douglas. Mr Jean Pierson, the* Airbus managing director, has indicated the consortium could develop a smaller 130-seat version of its A320 twin-engined airliner for abont $400m.

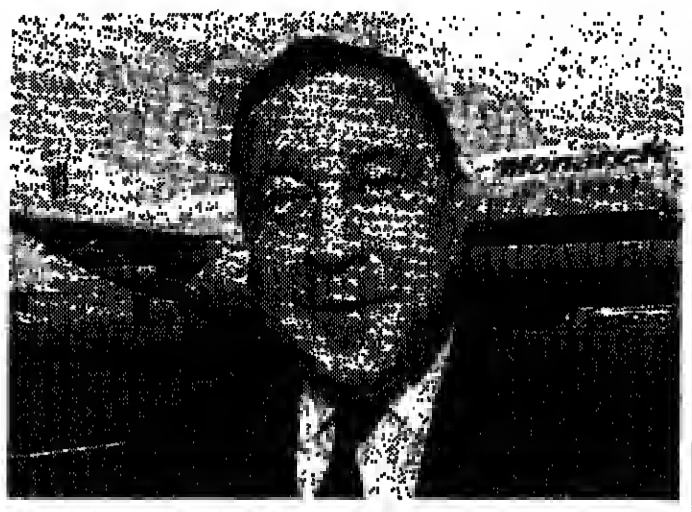
However, under Airbus rules, the consortium may only build aircraft of 150 seats or more. But Airbus is now expected to seek ministerial approval to conduct a detailed feasibility study of a smaller airliner. At this stage, the Germans appear committed to the project of developing a new regional jet with the French and the Italians, while BAe and the UK government are continuing to campaign for the Airbus solution.

The manoenvres between the French, the British, the Italians and the Germans are being watched intently by Fokker, the Dutch aerospace company specialising in commuter aircraft and regional jets. Fokker has also announced plans to develop a larger 130-seat version of its Fokker 100 jet. It has warned that the market for regional jets and commuter aircraft is becoming increasingly crowded. Apart from the European and North American manufacturers, developing countries with ambitions to build an aerospace industry of their own have also earmarked regional and commuter aircraft as their entry into the market.

This reinforces the case for greater consolidation. In the turho-propellsr market, the *recent agreement of Aerospat*iale and Alenia to acquire from Boeing the US company's De Havilland Canada subsidiary is part of this general consolidation trend.

The deal, which still requires Cansdian governmsnt approval, will strengthen the ATR partnership hetween Aerospatiale and Alenia. It also fits in with tha efforts of the two companies to create with Dasa a strong gronping of interests in the regional and commuter aircraft field.

Paul Betts



Jean Pierson: Airbus managing director

Rolls-Royce Tay engine

Paul Betts examines the aircraft engine market

Fierce competition reaches new peak

THE cut-throat competition in the aircraft engine market has reached *new peaks.* The recession in the airline sector coupled with the decline in defence orders – traditionally the most profitable part of the business – have placed enormous pressures on an industry with some of the longest and most expensive lead times in *the manufacturing field.*

With few signs of the overall trend in military expenditure by governments being reversed in spite of the Gulf conflict, the engine makers have continued to focus on the commercial market for long-term growth. But the civil side is no longer expected to continue growing at the same breakneck rate of the last five years.

Indeed, all the engine makers are rationalising their *operations in the face of the* cyclical downturn in the commercial aerospace and aviation market, exacerbated by the impact of the Gulf war on air travel and the economic recession in a number of western countries. Rolls-Royce, for example, has been forced to *reduce its workforce* by *6,000* jobs this year and has already warned it may have to cut more jobs next year. Its two principal competitors in *the* US, Pratt & Whitney and General Electric, have also had to launch restructuring programmas to adapt to the *increasingly difficult aerospace* market environment.

These restructurings have also coincided with the continuing trend of partnerships and alliances between the various engine makers, with the larger groups forging or consolidating their ties with smaller *ones seeking to expand their* activities in the engine field.

However, after the unprecedented burst of new jet aircraft ordars in the late 1980s, demand has now levelled off, with annual aircraft deliveries expected to average between 500 and 600 airliners over the next 20 years. Even in the longer term, the order inflow for commercial aircraft and engines is no longer expected to continne at the rate the industry has enjoyed in recent years. Compounding the situation, the financial difficulties of airlines have resulted in a declina in the demand for spare engine parts, which have elways been a strong source of income for manufacturers.

Tha commercial aircraft market is also expected to change over the next 20 years with increasing demand from airlines for large wide-bodied aircraft rather than twin-engined *narrow bodied* airliners. Both Boeing and Airbus expect the average size of aircraft to increase from around 160-170 seats to 230-250 seats over the next decade.

The most dynamic sector of the market for aero-engine companies is thus widely expected to be the supply of new heavy-thrust engines of 80,000lb or more to power the new generation of wide-bodied passenger aircraft being developed hy the big three airframe manufacturers.

The European Airbus consortium is developing the A330 twin-engined wide-bodied airliner, which it plans to stretch into a *bigger aircraft. Airbus is* also already talking abont building an even bigger aircraft, the A350, with a capacity of 600-700 seats to challenge Boeing's dominance in the jumbo aircraft market.

Boeing, for its part, has recently launched its new 777 family of wide-bodied aircraft and has plans to stretch the initial versions of the new aircraft into a bigger airliner. This will require even more powerful engines. In the same way, McDonnell Douglas is working on a larger version of its new MD11 three-engined jet called the MD12X.

The market for the new generation of big engines is estimated at $50bn between now and the end of the century. *This is roughly half the total* aero-engine market to the year 2000 and will be vital for all leading aero-engine manufacturers. The contest is all the more intense because mostairlines have yet to choose which engine they will select for their new wide-bodied airliners. *Moreover, the cost of develop*ing these engines is huge.

The battle for the big thrust engines is essentially a three-cornered contest pitching Rolls-Royce against General Electric of the US in partnership with Snecma of France and Pratt & Whitney of the US, *which has recently enlisted the* support of MTU of Germany.

Rolls-Royce is spending £400m developing its new Trent engine, a powerful derivative of its RB211 series. GE is spending even more. The US company has decided to invest with its partnars a total of *about $1.5bn in* a *whole new* engine programme called the GE90. Pratt & Whitney, for its part, has also decided to develop a more powerful version of its PW4000 engine.

At this early stage in the contest, Pratt & Whitney appears to have gainsd the edge over its two competitors. With *150 orders and options for* its new heavy thrust derivative, Pratt & Whitney has become the first engine mannfacturer to be selected to equip Boeing's new 777 wide-bodied aircraft.

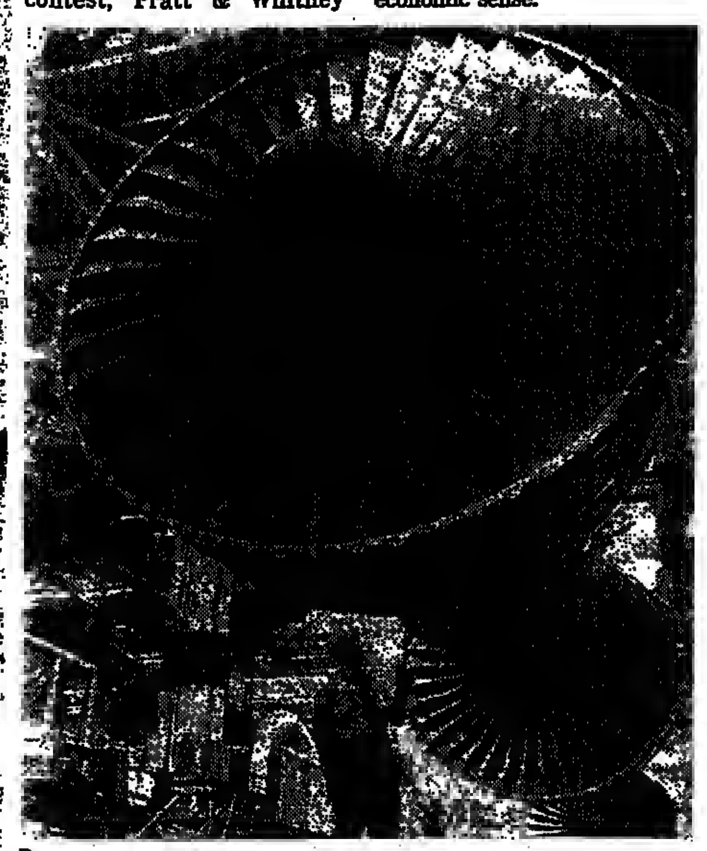
Rolls-Royce has won 78 orders and options for the Trent but *has* yet to clinch a 777 order. Getting on the new Boeing aircraft as soon as possible is seen as crucial for the *future* of the Trent. As for GE, the US group is banking on its new fuel efficient technology for the GE90 to secure a big slice of the wide-bodied airliner market.

Although attention in the aero-engine market has been focused on the so-called "battle of the big fan engines", the *competitive pressures* have been just as fierce in the smaller engine market. The 100-150-seat commercial airliner market remains an important component of the overall market place.

Aero-engina manufacturers are also considering developing *new engines to power several* new smaller jet airliner programmes.

However, all the engine makers agree at least on one thing: there is little room for cut-throat competition in the supersonic field. Like the airframe manufacturers, aero-en*gine companies are showing* renewed interest in supersonic aircraft development and are studying designs for a second generation supersonic airliner to replace Concorde in the next century.

They all concur that wide-scale international co-opera*tion will* ba *necessary to* davelop new snpersonic enginas. Without such co-operation, there is littla chance of a second generation Concorde going much beyond the drawing board and making economic sense.



Pratt & Whitney PW4000 engine

David White examines the steep decline in spending on military hardware

Defence cuts are not provisional

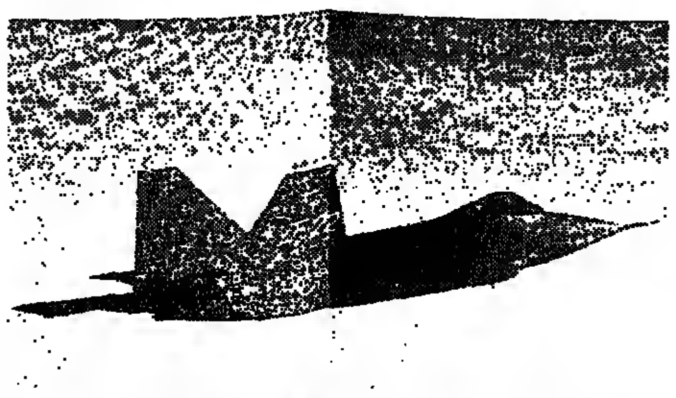
THERE IS nothing provisional about the decline in defence spending. If there had been, surely the developments of the past six months would have been the test: a war in the Gulf together with a distinct cooling in last year's euphoria about the new age of relations between the west and the Soviet Union.

The pace of arms control has slowed, with haggling over the implementation of last November's 22-nation Conventional Forces in Europe treaty and little prospect of any further agreements of that kind in the conventional field, involving specified all-round cuts and strict verification. However, defence cuts are not only continuing, but are going far beyond the CFE treaty.

The clearest demonstration of the determined nature of this trend was the announcement of US plans for spending cuts, right in the middle of the Gulf war. These included the termination of several equipment programmes over the next two years.

The $278bn requested for Pentagon spending authority in the next financial year would be a 1 per cent drop in real terms, following an annual fall of more than 11 per cent, and with another cut of almost 4 per cent planned for the 1992-93 fiscal year. The Pentagon confirmed its aim to reduce the US armed forces by about a quarter over the next five years, with heavy cuts in warships, tactical fighter wings and army divisions.

The UK has since also dispelled suggestions it might be having cold feet about cuts in the aftermath of the Gulf war by announcing the disbandment of three German-based squadrons of Tornado aircraft which had all been in the Gulf campaign.



YF-22: US Air Force's choice as its Advanced Tactical Fighter

This might not be quite as politically sensitive as scrapping army regiments, some of which have strong regional ties and therefore possible electoral implications. But it showed that, even if the British government was taking its time over its Options for Change defence review, it was not entertaining second thoughts.

Lessons from the war, on which military staffs in the US, Britain and France have been heavily engaged since the end of hostilities in February, will need to be incorporated into the plans. These are likely to focus on specific needs and priorities in weapon procurement, reinforcing trends that were already evident in the search for greater mobility and greater versatility of forces and equipment. Air force chiefs and aerospace companies have seized on the overwhelming success of the allied bombing campaign against Iraq to bolster support for new programmes. "Air is becoming the dominant force," Air Chief Marshal Sir Peter Harding, the UK chief of air staff, told the Royal Aeronautical Society. "You can't do anything without it."

In Britain, the war has put back the timing of detailed decisions on Options for Change, outlines of which were announced last summer. Plans involve quite radical force cuts, but the financial benefit expected to stem from them is relatively modest. Additional problems are accumulating because of the delay, and budget plans already appear to be awry for this year and possibly next year. This will mean finding yet more savings.

The defence recession is well under way throughout most of the industrialised world. Even Japan, which has been a bastion of spending growth, has cut back on the rate of increase in its defence budget.

Any move to restrain the sale of arms to the Middle East would add to the general distress of defence companies, already hit by cuts and by delays in decision-making.

A year ago, Mr John McDonnell, the chairman of McDonnell Douglas, the Pentagon's largest supplier, sent a memorandum to staff entitled "The Hard Reality", warning of extensive cuts. Since then the group has suffered a series of disappointments in the US and overseas.

The number two US contractor, General Dynamics, involved in a wide range of defence equipment, expects to cut its 90,000-strong workforce by at least 30 per cent by the mid-90s. Chary about adventuring into risky civilian markets, it is opting to become a smaller company.

Hughes Aircraft, the leading US military electronics supplier, owned by General Motors, sees its defence business remaining flat, with any growth having to come from civil activities. Mr Michael Smith, its executive vice-president and chief financial officer, says it is expecting reductions in US defence spending of 5 cent a year "at least through 1995", deeper than the administration's projections.

The UK has seen a succession of employment cutbacks in the defence industry in the past few months. These include plans by submarine builder VSEL to cut up to 5,500 jobs within five years. This would be about 40 per cent of its workforce. Rolls-Royce is to cut 2,000 jobs at its Bristol military aero-engine operations as part of a package of wider cuts which also include closing a helicopter engine factory. Last December, British Aerospace announced closures in its military aircraft division involving 5,000 job losses. This was followed in March by a cut of 2,200, almost a quarter of the total, in its guided weapons division.

According to the Stockholm International Peace Research Institute, arms production worldwide could be substantially reduced in the 1990s. It said in its recently-published annual yearbook that only a few countries were exceptions to the downward trend last year.

The institute's figures showed world military expenditure down by 5 per cent in 1990, the third year of decline, to $950bn. Procurement of major weapons by European Community countries was down by 10 per cent in real terms.

Military spending in the Middle East was expected to show an increase of about 10 per cent for last year, but while Saudi Arabia and the smaller Gulf states increased their imports, other countries in the region were buying less.

Trade in large conventional weapons, according to SIPRI, plummeted by 35 per cent to $21.7bn. This was less than two-thirds of the peak level of 1987. The US took over from the Soviet Union as the biggest exporter, with 40 per cent of the total, while EC countries kept their share of about 21 per cent.

The institute warned there would be fierce competition for remaining contracts in countries such as Japan, India, Saudi Arabia and South Korea, and that clients such as these would demand more favourable terms, offsets and counter-trade agreements.

British Aerospace Hawk in trainer and fighter versions

COMBAT AIRCRAFT

Lessons of 1991 cut both ways for manufacturers

THE lessons of early 1991 cut both ways for manufacturers of combat aircraft. No better vindication for programmes criticised as excessively sophisticated and expensive could have been found than the Gulf war, with its convincing, blinding demonstration of air power. But the month the war started also saw the biggest project cancellation.

The exhibition provided by a whole panoply of modern western aircraft in the war does not alter two realities. Although projects get bigger, they also become fewer. And although they become fewer, it would be rash to assume they were safe.

The reminder that these are tough times in US defence came in January when the Pentagon "killed" the A-12 Avenger 2, the $52bn flying-triangle attack aircraft which McDonnell Douglas and General Dynamics were jointly working on for the US Navy. Plans, although already reduced last year, were for 620 aircraft, working out at more than $80m each. It had once been considered one of the most secure of programmes, before the revelation last year of delays and cost increases.

In additon, argument goes on over the future of the even bigger B-2 strategic "stealth" bomber programme, which has an estimated cost of some $65bn. Lieutenant-General Charles Horner, the US air chief who led the air war against Iraq, has brought his weight into the campaign for the Northrop aircraft, arguing that it would have all the advantages of the F-117A – the stealth aircraft which became one of the symbols of US superiority in the Gulf – but with five times the range and 10 times the payload. However, planned numbers were already cut back last year from 132 to 75, and the administration faces opposition in Congress to going beyond the 15 aircraft already authorised.

A third instance of the high stakes in the military aircraft game was the verdict between the two teams contending for the US Air Force's Advanced Tactical Fighter (ATF) – decided after a four-year contest in favour of the Lockheed/Boeing/General Dynamics F-22.

Like the European Fighter Aircraft (EFA) for the UK and its partners, it is the only new fighter project the US industry is likely to have between now and the end of the century. Due to enter service in the late 1990s with up to 750 due to be purchased by the USAF, it is expected to be a $70bn-plus project.

The decision puts Lockheed, as team leader, back in the business of fighter manufacture following completion of F-117A production.

At the same time the decision was the fourth in a series of blows for McDonnell Douglas, manufacturer of the F-15, the fighter the F-22 is destined to succeed, and partner with Northrop in the competition.

McDonnell Douglas had already suffered the cancellation of the A-12, the loss of a South Korean order for F/A-18 fighters, and a setback for its helicopter division in another team competition to produce a light attack helicopter for the US Army.

The bad news was only partly offset by the prospect of more F/A-18 purchases by the US Navy. An advanced F/A-18 version is seen as a possible substitute for the A-12, at least before a long-term replacement emerges.

In Europe collaboration between military aircraft manufacturers is becoming more solidly structured.

Eurofighter, the Munich-based EFA joint venture, is due to be merged later this year with Panavia, its equivalent in the nearly-exhausted Tornado programme. The management agencies representing the governments involved in both projects (Britain, Germany, Italy and in the EFA programme Spain) are also to be fused.

However, the idea of setting up a combined European military aircraft company with wider ambitions – discreetly floated last year by Deutsche Aerospace, the German aircraft group put together by Daimler-Benz – has so far remained grounded.

Political complications surrounding the whole area of defence plans and military sales in Germany already cast the principle shadow over the $40bn-plus EFA project. The question of whether Germany will actually purchase the aircraft once the $12bn development phase is completed, and how the project will survive if it does not, is one that the partners want to stir up as little as possible until the crunch comes. The aircraft is due to fly for the first time next year.

Since development was launched in 1988, there have been delays in the selection of bidders for sub-contracts, but the programme has been reorganised to maintain the late-90s in-service target.

Officially, Britain has not moved from its originally stated intention of purchasing 250 out of a total of 765 foreseen by the four partners in the project, but nobody now believes these numbers. In a recent report on the EFA project published by the House of Commons Public Accounts Committee, all figures relating to numbers of aircraft were excised from the evidence and replaced with asterisks.

David White

GUIDED MISSILES

Television puts weapons on show in living-rooms

TELEVISION coverage of the Gulf war brought missiles into living-rooms. The campaign showed off the variety of guided weaponry at the disposal of the US and its allies: from video images of laser-guided bombs and missiles homing in on ground targets, to anti-radar missiles, anti-tank missiles, sea-launched cruise missiles and, above all, the novelty of the anti-missile missile, a part played not only by the US Patriot but also, in one isolated but significant incident, by the UK's Sea Dart.

Apart from the Patriot-versus-Scud battle, other names became instantly familiar: Tomahawk, Maverick, Harm, Hellfire, Sea Skua.

In some cases the Gulf was used as a testing-ground for weapons, such as SLAM (Stand-off Land-Attack Missile) and ATACMS (Army Tactical Missile System), or the British Alarm (Air-Launched Anti-Radar Missile).

The specific lessons learned and the implications for future procurements are still being worked out. The performance of the Patriot – which on January 18 became the first weapon to intercept a ballistic missile in flight during hostilities – has been seized upon in the US as a means to inject new vigour into the Strategic Defence Initiative programme.

The Gulf provided a shop window for exports of guided weapons. However, manufacturers see little prospect for market growth. As the performance of weapons improves, the numbers required are reduced.

Prospects for European companies to compete with US manufacturers in the world market – and to penetrate the market in the US itself – have been marred by the duplication of national efforts. Consolidation in the European industry remains an elusive goal following the failure of attempts by British Aerospace and France's Thomson-CSF to set up a joint company pooling their guided-weapon activities.

Under a plan agreed in late 1989, the joint company was to have started operating at the beginning of this year. Except in the area of air-defence missiles, where they are competitors, the two groups would have been largely complementary, with Thomson-CSF's breadth of expertise in guidance systems matching BAe's capacity for producing complete missiles. The joint venture, Eurodynamics, was set to be the dominant European force in the sector with annual sales of some £1.4bn.

The shelving of merger plans may well have been a source of *schadenfreude* to the other main French missile companies Aérospatiale and Matra, which were worried that the creation of Eurodynamics could threaten the structure of the sector in France. As a result of pressure from Aérospatiale in late 1989, Britain had to join a Franco-Italian naval weapon programme, the Family of Anti-Air missile Systems (FAMS), based on Aérospatiale's Aster missile, before the French government would give its blessing to the merger talks. The Franco-Italian programme also has a land-based variant which would be a possible contender to replace for Britain's Bloodhound air-defence missile, which is being withdrawn this year. But BAe has teamed with Raytheon to offer the Patriot for this requirement.

The BAe-Thomson missile merger was held up by an investigation by the UK Monopolies and Mergers Commission, which cleared it in January, but two months later the talks were called off, with the partners agreeing to continue co-operating on individual projects.

During more than a year of efforts to agree on terms for the venture, the circumstances had changed. At the outset BAe appeared to be bringing more to the venture in terms of assets and prospects, and there was talk of a French cash contribution. But Thomson's position improved with the award late last year of a fresh FFr3bn ($500m) order from Saudi Arabia for its Crotale close-range air-defence systems. Meanwhile, major projects at BAe's Dynamics division have come across a series of problems and uncertainties.

High among these are the latest turns in the troubled history of the Advanced Short-Range Air-to-Air Missile. This was conceived as the European-developed end of a joint US-European programme covering two new air-to-air weapons. Asraam was set to become the standard weapon to replace the US Sidewinder. The US was to adopt the European-designed weapon and the European partners would adopt the US-developed medium-range weapon, Amraam.

The first memorandum of understanding, between the US, Britain, France and Germany, goes back to 1980. France pulled out; Norway and Canada joined; Britain took over leadership from Germany; Germany pulled out; Norway and Canada pulled out. The missile is still not in full-scale development. Instead of European partners, BAe now has a teaming arrangement with Hughes Aircraft of the US for the seeker system, and has reduced the price of its offer to the British government for an initial contract covering full development and initial production. This is expected to be worth between £700m and £1bn.

Last year, however, the UK government decided to open the programme to competition. BAe faces rivalry from GEC-Marconi, teamed with Matra of France on a project derived from the latter's Mica missile programme, and possibly from US companies.

David White

HELICOPTERS

On tenterhooks for decisions

THE helicopter business is a good place for masochists these days: an overcrowded industry waiting on tenterhooks for the big military procurement decisions that promise to do more than anything else to sort it out.

The merger of the helicopter divisions of France's Aérospatiale and Germany's Messerschmitt-Bölkow-Blohm is the one structural change under way among a group of western manufacturers who all agree they are too numerous: four (due to become three) in Europe and four in the US, not counting specialists in piston-engined lightweights.

The industry relies heavily, although to differing degrees, on the military sector. The market for civil helicopters, after falling in the 1980s, seems to be recovering. Pegged to a large extent to the fortunes of the offshore oil business, it is expected that commercial sales could balance military sales in overall numbers, but not in terms of value, where at least two-thirds is reckoned to come from military orders.

The Gulf war provided a demonstration of the increased capabilities of armed helicopters since they began to be used during France's war in Algeria and America's in Vietnam. US AH-64 Apaches and AH-1 Cobras proved highly effective against Iraqi armoured forces. They were capable of sustained offensive action and even – to the surprise of allied commanders – taking prisoners.

Ideas about the use of helicopters in the battlefield are rapidly evolving. Many believe that, as defences in Europe are thinned out, helicopter gunships could become the favoured weapon for anti-tank warfare; making use of their agility and mobility and benefiting from improvements in counter-measures and protection to become less vulnerable.

The Gulf conflict also gave prominence to British ship-based Lynxes and the indispensable role played by heavy-lift Chinook helicopters.

However, the increased importance given to helicopters is only relative. Overall, industry forecasts suggest that the military helicopter fleet in the US and Europe will stabilise, if it does not contract.

Following closely on the war came the long-awaited US decision on the choice of a new armed scout helicopter – a competition affecting all four leading helicopter companies, grouped in two rival teams. The US Army's top acquisition project calls for almost 1,300 aircraft. It is expected eventually to be worth some \$34bn. The two-pilot helicopter, the first in the US to be designed to fight enemy rotorcraft, is needed to replace some 3,000 Vietnam-era helicopters that have become technically obsolete and expensive to maintain.

The contract awarded to the Boeing/Sikorsky "First Team", in which MBB is also associated, covers development work worth some \$2.8bn through to 1998 when the first production aircraft is due.

The losers were McDonnell Douglas's helicopter division and Bell Helicopter Textron. They will now have to rely more on the civil market and work to upgrade existing helicopters and exports. The civil side accounts for half of Bell's business, but McDonnell Douglas, like Sikorsky, relies 85 per cent on military sales. It is now counting on foreign customers to keep its Apache production line open beyond 1993.

The improved Longbow version of the Apache, with a millimetric-wave radar mounted above the main rotor, is favourite for a British army contract. But a UK decision is still some way off, following the withdrawal last year from a light attack helicopter project with Italy, the Netherlands and Spain, and the project's subsequent demise.

A competition is expected between the upgraded Apache and the Franco-German Tigre/Tiger, which made its maiden flight in April. This is planned for delivery to the French and German armies from 1998 onwards, mainly for the anti-tank role but also in a French combat-support version. Production of 427 units is planned.

UK manufacturer Westland, although not in a position to participate in development, is poised to claim a production share in either the Apache or the Tiger for the UK market. A further possible contender is Bell with its AH-1W Super-Cobra.

The crucial decision for Westland, however, is a production go-ahead for the EH101 Merlin naval helicopter, in which it is involved jointly with Agusta of Italy. Nine prototypes of the EH101 are now flying. The project, planned also as a troop-carrier and a commercial helicopter, has become one the Ministry of Defence's main procurement headaches. The cost of development and initial production of 50 helicopters is put at £2bn. Needed by the Navy for its new anti-submarine frigates, the programme schedule has slipped by two years.

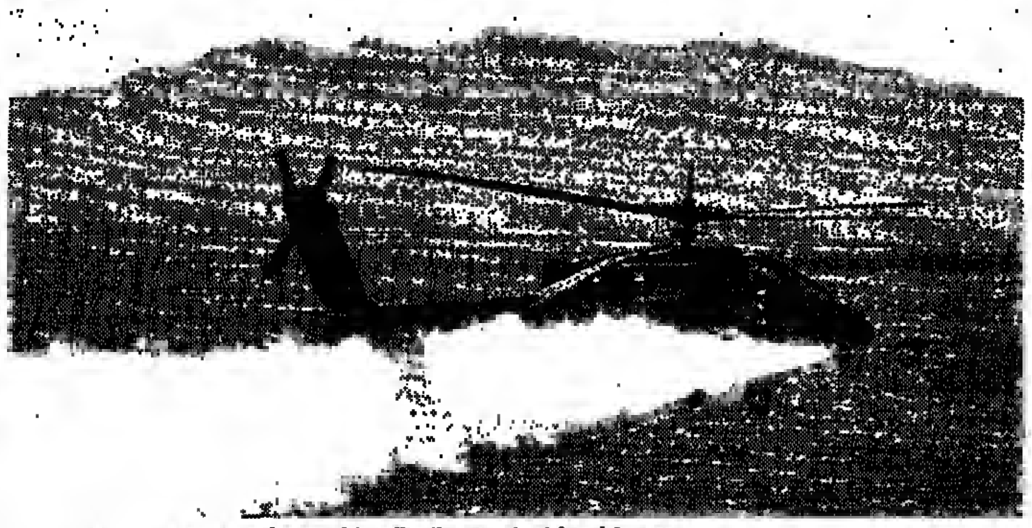
The ministry is as desperate to ensure costs are kept under control as Westland is to end its drought of new helicopter orders. The MoD received proposals in February from two bidders to take over prime contractorship and manage the helicopter itself and its systems. A decision between the two – one group made up of British Aerospace and GEC-Marconi, the other of IBM of the US in association with Westland – is expected in the summer.

Whether the MoD buys the EH101 also for the role of troop-carrying utility helicopter or opts instead for the Sikorsky Black Hawk (as used in the Gulf), Westland has been covering its options in the same way as with the army combat helicopter.

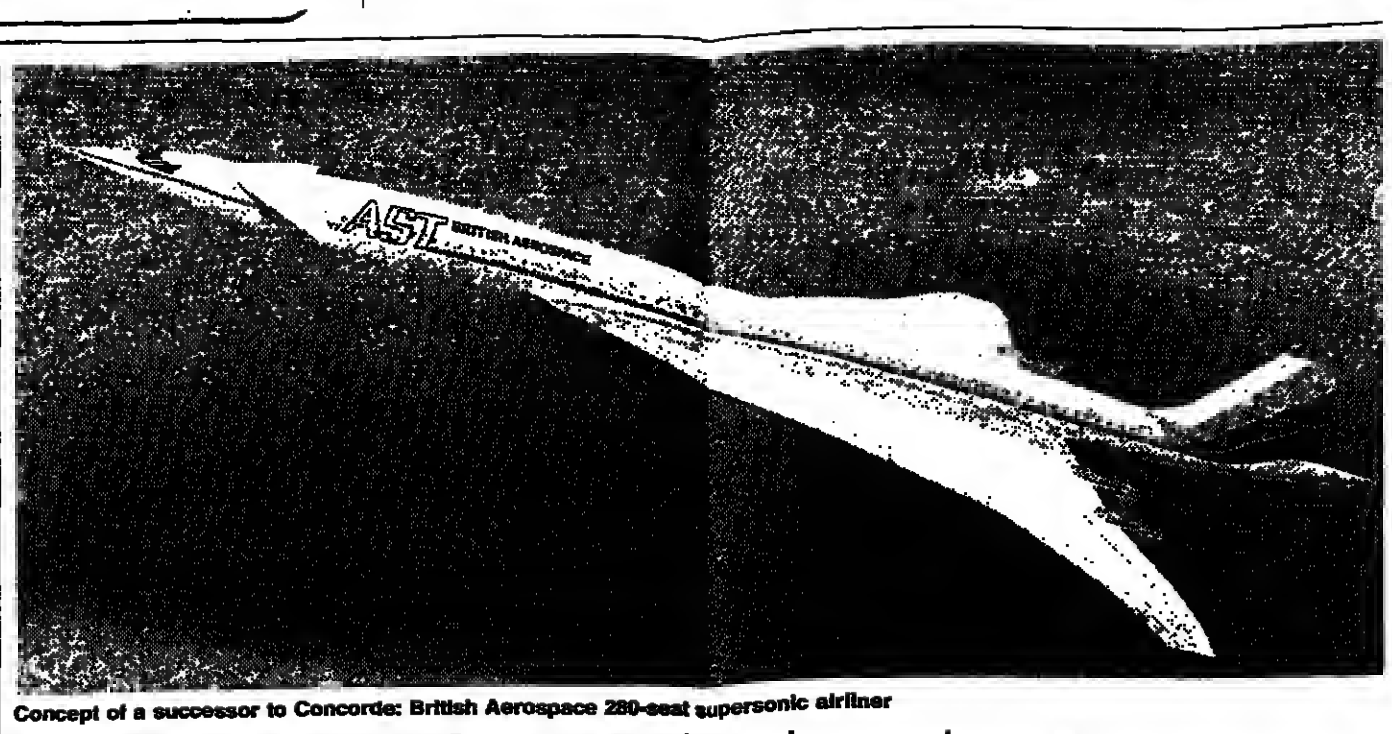
The European NH-90 naval and troop transport helicopter – a project from which Britain pulled out – has meanwhile gone into full-scale development after difficulties over the size of the Italian contribution alongside that of France, Germany and the Netherlands.

Together with the Tiger it provides substance for the Aérospatiale-MBB merger. The new company Eurocopter is designed to form the second-largest western helicopter concern after Sikorsky. The merger, finally agreed last year, has proved to be a long, drawn-out affair. An international marketing company was established as an interim step in May, with a view to completion of the merger by the end of the year. Neither Westland nor Agusta responded to the partners' initial invitation to join them.

David White



McDonnell Douglas Apache: highly effective against Iraqi forces



Concept of a successor to Concorde: British Aerospace 280-seat supersonic airliner

Supersonic development

Faster and far-reaching designs

VISITORS to this year's Paris International Air Show are hoping to learn more about progress towards a successor to the Anglo-French Concorde supersonic airliner – the so-called High Speed Commercial Transport, or HSCT.

For more than a year, small teams in airliner manufacturing companies – Boeing and McDonnell Douglas of the US, Aérospatiale of France, British Aerospace and Deutsche Aerospace (DASA) of Germany – have been studying the possibility of such an aircraft.

They have also been liaising with each other, primarily BAe with Aerospatiale, and Boeing with DASA, and collectively through what is called the Supersonic Commercial Transport International Co-operation Study Group. In the US, the government's National Aeronautics and Space Administration has been examining the feasibility of such an aircraft.

The view in the west's aerospace industries is not whether such an aircraft will be built, but when, with the most likely in-service date somewhere between 2005 and 2010. Convincing others, however, especially environmentalists and the governments that will probably have to subscribe most of the several billion dollars cost, is likely to be as tough as arriving at a design in which the manufacturers can share.

Concorde entered fare-paying passenger service in 1976, so that by 2000 it will have been in regular service for nearly 25 years. That is normally about the maximum lifespan for any subsonic airliner, but Concorde's annual utilisation is much lower.

Nevertheless, if any HSCT is to enter service somewhere in the early part of the next century, much of the preliminary research and development must be undertaken during the 1990s.

Pressures for such an aircraft include the fact that only a few Concordes were built – British Airways has seven, with one more stored at Filton, while Air France has six, with two kept on the ground. Production ended long ago, so the volume of spares available is severely limited. It seems likely that the overall number of aircraft in service will be progressively reduced as some are "cannibalised" to keep the rest flying.

Another factor is that Concorde, with its payload of only 100 seats, has always been regarded as a "top person's" airliner, with a premium fare which has limited its market. There is now a wider appreciation of the benefits of faster travel, as more people fly longer non-stop distances. By 2000, it is believed that long-distance traffic will have doubled in volume, stimulated by such new-generation subsonic long-range airliners as the Airbus A-340, Boeing 747-400 and McDonnell Douglas MD-11.

To be economic, the prospective HSCT will have to be much bigger than Concorde (which was aimed primarily at the transatlantic market), with between 250 and 300 seats, and a longer range – up to 6,500 nautical miles against Concorde's 3,500.

It will not necessarily need to be much faster than Concorde's Mach 2 (about 1,200 mph), perhaps flying at Mach 2.4, or 1,500 mph, while still capable of economic operation at subsonic speeds over land masses.

That means it will be more expensive to build and is likely to face even more severe environmental demands than Concorde in terms of noise levels and pollution to avoid further damage to the ozone layer.

Meeting those demands will be difficult technologically and financially – far beyond the capabilities of any one company. The HSCT will have to be a consortium venture.

There are differing views about the size of the potential market. Mr Mike Henderson, manager of High Speed Commercial Transport (HSCT) studies with the Boeing Commercial Airplanes Group, says that demand in the first quarter of the next century could justify up to as many as 1,000 new supersonic aircraft, worth some \$200-300bn, collectively carrying up to as many as 600,000 passengers a day.

Mr Louis J. Williams, who has been in charge of Nasa's second-generation SST studies for some time, believes the market might initially be between 650-750 aircraft, if certification were sought early in the next century.

European analysts, with the reality of Concorde behind them, are more cautious, assessing the market at no more than a few hundred or so aircraft.

Mr Henderson says the HSCT would reduce the Los Angeles-Tokyo flying time from the 10.3 hours to 4.3 hours. If initially limited to a range of 5,000 nautical miles, the aircraft would not be able to fly non-stop from Los Angeles to Sydney, but with one refuelling stop at Honolulu it would complete the journey in 7.3 hours or half the 14 hours of a subsonic jet. With range pushed up to 6,500 nautical miles, it would do the journey in 5.7 hours.

Michael Donne

Michael Donne investigates plans for a congestion-free future

Easing passenger flow

THE opening of the new £400m terminal complex at Stansted airport, Essex, by BAA (formerly the Britisb Airports Authority) this year, was an indication of the UK air transport industry's confidence that the long-term outlook is for significantly increased growtb in tbe industry. This optimism was expressed in spite of a sharp downturn in traffic in the early months of the year because of the Gulf war.

Traffic levels bave already begun to improve, although it may still be some time before the industry in western Europe returns to annual growth rates expected in normal years.

Most industry observers now believe that by 1992 expansion will again be the norm, bringing with it a resurgence of all the problems that were becoming serious even before the Gulf crisis last August, including congestion at airports and in air traffic control.

In the UK, notwithstanding the difficulties during the Gulf war which cut traffic at Heathrow and Gatwick by about 25 per cent, the Department of Transport's latest long-term forecasts to 2005 show passenger traffic rising from the base of 98.8m in 1989 to between 114.5m (the low estimate) and 136.8m (the high estimate) by 1995.

By 2000, the estimate is for traffic somewhere between 141.4m and 184.9m, and by 2005 between 172m and 244.3m. The London share of that traffic is expected to be 73 per cent in 1995 and about 71 per cent in 2005.

The figures show a wide range of possible traffic levels, reflecting the difficulties in forecasting such a volatile industry as air transport. But by any standards they indicate a potentially massive growth in the number of people travelling by air to, from and through the UK.

A similar situation is occurring throughout the world. The International Civil Aviation Organisation (ICAO) figure of more than 1.1bn internatiooal scheduled service passengers world-wide in 1990, is likely at least to double by 2000 and continue rising in the 21st century.

Altbough it is likely that some of that additiooal demand will be met by larger aircraft, especially on medium- to long-distance routes, overall the number of airliners in use will also grow substantially, even allowing for the retirement of a large number of ageing airliners.

Boeing, the world's biggest huilder of jet airliners, forecasts a net growth in the world commercial jet fleet of 5,334 aircraft to a total of 14,191 between now and 2005, involving an overall outlay by airlines of some $617bn.

Such a huge fleet expansion will generate strains in all directions – on the ground and in the international air traffic control system. Already throughout the world governments, airport authorities and airlines are having to give high priority in their forward planning to finding solutions to the serious problem of airport congestion. While some of the growth can be accommodated by improving overall airline and airport handling efficiencies, and by technological advances in air traffic control, which can help to provide additional aircraft movements, the only satisfactory long-term answer is to build more airport terminals and, if necessary, also runways.

There is hardly an airport in the UK that is not being modernised, expanded or refurbished to enable it to cope with traffic growth.

Worldwide, the provision of new and improved airports and their associated infrastructures is expected to cost at least £150hn hy 2000,with perhaps another £50bn for equipment.

In the UK, there is mounting pressure to solve the problem of providing additional airport capacity hy returning to the concept of an offshore airport, through the Marinair venture proposed for a site on the Kentish Flats in the middle of the Thames Estuary, at an estimated cost of £3.3bn.

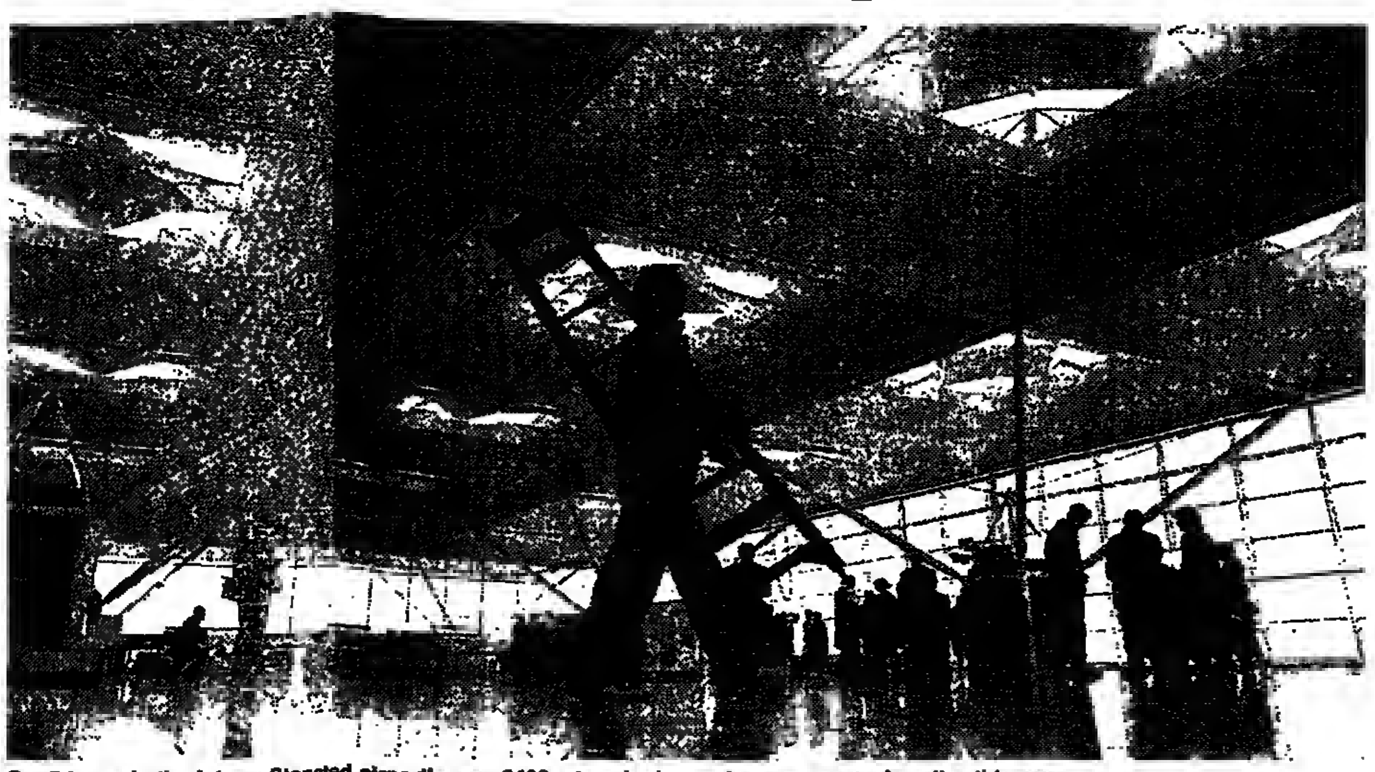
The offshore airport solution was originally proposed in the early 1970s on reclaimed land at Maplin, off the Essex coast. It was cancelled in 1974, at the time of the first world oil crisis, because it was not likely to be needed in terms of traffic growth, and was too expensive at a time of economic difficulties.

Subsequent traffic growth in the south-east has already far ontstripped that originally expected in the early 1970s. This has led to outlays on new terminals and other infrastructure developments costing in all more than donble the original estimated £750m for Maplin – with all the attendant environmental problems, and with more expense to come, inclnding £1hn for Heathrow's the projected terminal five and at least another £400m million for further terminal developments at Stansted, apart from the likely £200m cost of a new runway.

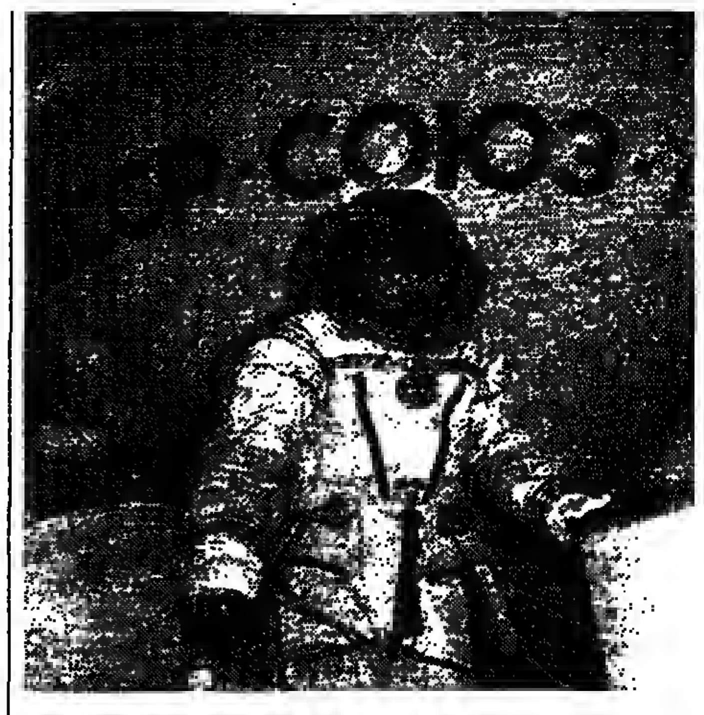
On the basis of those figures, continuation of Maplin would have been cheaper, as well as environmentally and sociologically more desirable.

Increasingly, air transport observers and many environmental groups believe that the practice of undertaking piecemeal solutions to the recurrent problem on an ad hoc basis every decade or so, with all its attendant planning, environmental and political difficulties, should be abandoned in favour of adopting a longer "time horizon" and planning for 30 years or more shead.

On that basis, a large-scale offshore solntion to the UK's south-east problem has many attractions, and while apparently grandiose and expensive, and perhaps looking too far ahead for some political tastes, might well prove to be the cheapest and most attractiva solution economically, environmentally, politically and industrially.



Confidence in the future: Stansted airport'a new £400m terminal complex was opened earlier this year



Helen Sharman: Britain's first lady of space

Paul Betts looks at space travel

A more mature commercial age

THE past few weeks have seen a resurgence in space activity. For the first tima since the Challenger shuttle disaster in 1986, NASA, the US national space agency, successfully flew in May two shnttles in one month: the European space rocket Ariane has now launched 42 satellites into orbit in exactly 42 months confirming itself as a reliable space satellite transport system: a Briton entered space for the first time on a Soviet mission to the Russian space station Mir: and 12 people, including for the first time four women, were in space at the same time last month.

Space has now entered a new, more mature commercial age. Although the technological challenges and the financial risks remain high, especially with the squeeze on government resources, aerospace companies are looking towards space as providing a significant future growth market. It is no coincidence that in spite of dismal British government support for the UK space programme, British companies snch as British Aerospace, Marconi and Logica, and scientific laboratories have attached increasing importance to space activities and have become leaders in their fields.

In Europe, France has undoubtedly taken the lead in encouraging the development of a European space industry. Its efforts have been largely concentrated on building up during the past 10 years the European Ariane space satellite launcher programme. Although still modest by comparison with the overall US or Soviet space programmes, Ariane has been successful in giving Europe leadership in the commercial space transport business, according to Mr Charles Bigot, the chairman of Arianespace, the European satellite launch company 56.6 per cent controlled by French state and private shareholders.

During the past 10 years, Ariane has increased its share of the western world's commercial satellite launch market. Its order backlog stands at 34 satellites to be launched. The European rocket now accounts for abont 50 per cent of commercial satellite launch orders in the western market.

The achievement is all the more remarkable because the European programme decided to concentrate on the development of rockets, or expendable launch vehicles (ELVs) as they are known, at a time when the conventional wisdom was that they had become redundant. The US, by contrast, threw its lot into the development of the space shuttle. But the shnttle turned out to be too complex a system on which to build a reliable commercial space transport business.

The disaster of the US shuttle Challenger five years ago and the long interruption in US manned shuttle flights vindicated the European decision to concentrate on rocket technology. The troubles of the US shuttle led to a change in US space policy with the Washington administration encouraging the three US launcher manufacturers, including General Dynamics, McDonnell Douglas and Martin Marietta, to compete against Ariane for commercial satellite launches.

This has greatly intensified competition. Indeed, it has provoked growing trade frictions between the Europeans and the Americans as well as with the Chinese and the Soviets, all vying for a large slice of the satellite launch market. The Europeans complain that the US protects its industry hy restricting its own large government satellite launch market to domestic US companies. In turn, the US argues Ariane has henefited from as much government snbsidy as its American competitors.

Negotiations to establish a set of fair trading rules for satellite launches between the European Space Agency and the US started last autumn. The Europeans are also anxious to see any eventual agreement on competition rules include Japan, which is developing a space launch industry, and countries with non-market economies such as the Soviet Union and China, both seeking to enter the western launch market. China has already won launch orders for an Australian satellite and an Arab telecommunications satellite.

The European Space Agency is working on the next generation of satellite launch vehicles to replace the family of Ariane IV rockets with a larger, more powerful rocket, Ariane V. France recently opened a $100m plant to build the new rocket with twice the power of the Ariane IV rocket and a payload capacity of about six tonnes.

European governments are also expected to launch the Hermes spaceplane programme this year. The UK government, however, has decided not to participate in the Ariane V and Hermes programmes. But UK manufacturers are reassessing the long-term opportunities. At the Farnborough air show last year, British Aerospace and the Soviet Union announced plans to study the joint development of a space satellite launch system based on the UK's Hotol: the Horizontal Take-Off and Landing space vehicle.

AIR TRAFFIC CONTROL

Planning for busier times after the slump

DURING the dark months earlier this year, when the world air transport industry suffered an unprecedented slump in traffic as a result of economic difficulties and the effects of the Gulf war, work was quietly pressing ahead to prepare the industry's ground and air infrastructure for an expansion in passenger numbers next century.

In a spring 1990 "crisis report", the International Air Transport Association (IATA), representing 200 airlines, including nearly all the big operators, estimated that losses caused by congestion were running at about $5bn a year in western Europe alone. Losses of $10bn a year were forecast hy the end of decade if nothing was done.

This was due to inadequate ground facilities – lack of terminals and runways – and to inadequacies in the air traffic control (ATC) system, stemming from lack of investment.

IATA, by means of a specially created Task Force, was lohhying governments to ensure that work to modernise the overall infrastructure was swiftly begun.

The downturn occnrred in the middle of the IATA campaign, but did not disrupt it.

In the UK, the Civil Aviation Authority, which runs the National Air Traffic Services (NATS), leads most other countries, especially in western Europe, in developing improvements to the air traffic control system to enahle the UK to handle the increase in aircraft movements stemming from traffic growth.

Under a £750m "Investing For Growth" programme covering more than 150 ATC improvement projects, besides substantially increasing the number of air traffic controllers, the CAA has put much thought and energy into deciding how to handle the prospective traffic increases.

One result has heen the development of a new control system called the Central Control Function (CCF), based on a "tunnels in the sky" concept of one-way aircraft arrival and departure routes for each of the airports in the south-east of the country.

When fully operational hy the mid-1990s, CCF will benefit all air travellers using British airspace, because a high proportion of all domestic and international flights fly over south-eastern England.

The CAA is already considering the extension of CCF-type systems to the north of England and the Scottish Lowlands to meet the special needs of those areas and their predicted traffic growth. Elsewhere in the UK, a £3m ATC improvement programme has been inaugurated at Birmingham International Airport (where a £60m second terminal comes into operation this year, raising capacity to more than 6m passengers a year).

For western Europe as a whole, the Eurocontrol organisation has heen selected by more than 20 governments in the European Civil Aviation Conference as the vehicle for creating a new centralised air traffic control system for much of western Europe.

Eurocontrol, under of Mr Keith Mack, formerly head of the CAA's National Air Traffic Services, is spending Ecu36m (£25m) on the design phase of an advanced ATC for western Europe, called the "Easie Plan". This phase is expected to be completed by 1995, when it will move into the implementation phase, costing some Ecu900m (£802m) and including detailed technical design, development, procurement and installation to be progressively introduced with completion set for 2004.

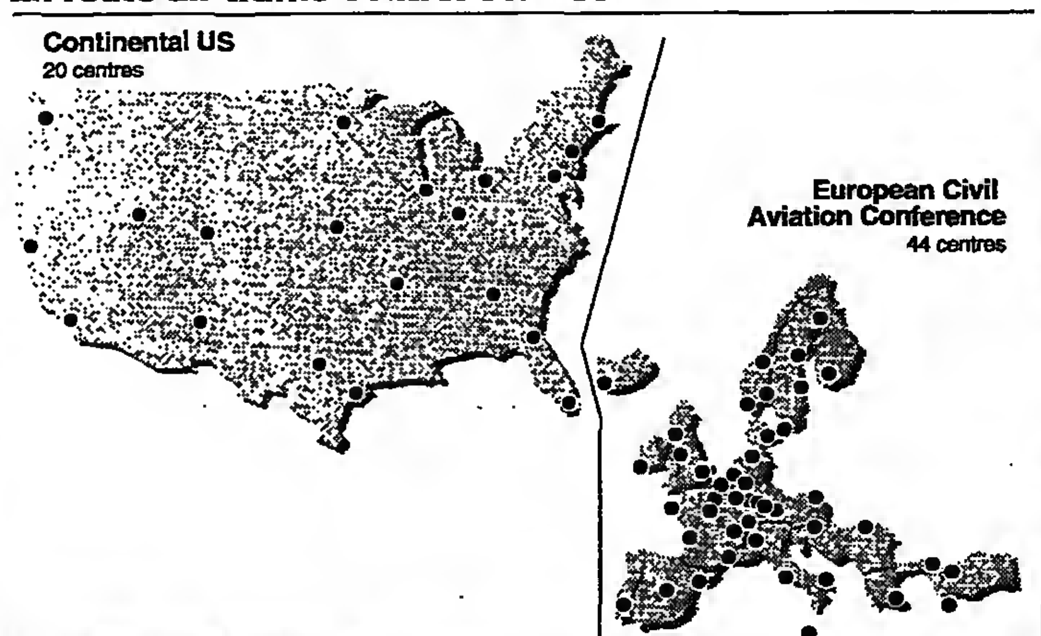
By that date, it is intended that Europe will have the world's most modern ATC system, able to cope with the complex and expanding flows of traffic through more than a score of countries well into the 21st century.

In the meantime, IATA has set up an Air Transport Action Group (ATAG), under Mr John Meredith, seconded from British Airways. ATAG is already lobbying governments, airport authorities and others to take the necessary political, financial and physical action to improve commercial aviation infrastructures.

Mr Meredith points out that the economic cost of air transport congestion is "terrifyingly high". The current $5bn cost in Europe alone is soon likely to be paralleled in other parts of the world – the problem is already emerging in Japan and other parts of the Far East and south-east Asia, the world's fastest growing area of air transport. If corrective action is not taken soon world-wide, he says, the international air transport indnstry faces "strangulation".

Michael Donne

En route air traffic control centres



Source: Association of European Airlines

London air traffic centre: controlling flights over the capital

BUSINESS AVIATION

Flexibility of company jets lures executives

THE USE of aircraft by companies and individuals for business travel has been growing rapidly in recent years, and is expected to continue to do so in tbe 1990s.

There are several reasons. Chief among tbem is a growing dissatisfaction with the quality of scheduled services in spite of attempts by airlines to woo business travellers.

Increasing congestion in airport terminals; the inflexibility of many airline timetables; the difficulties of road access to big airports; and the failure by many airlines to address what many business travellers really want – more leg-room in business and economy class cabins – are working in favour of the corporate aircraft or air taxi operation.

The smaller private executive turboprop or jet aircraft is more flexible than large scheduled airliners. It can operate to the owner's schedules. It needs less runway space, and can use many more, and more convenient, airfields.

An expanding industry has grown up in tbe provision of smaller, fixed-wing light transport aircraft. Many of these are turboprops, which are cheaper to operate than jets and are thus popular with many corporate users. Fast jets are also much in demand.

There are many manufacturers, including British Aerospace with the 125 series, Dassault of France with its Falcon range, Canadair of Canada with its Challenger, and such US companies as Beech, Cessna, Gulfstream Aerospace and Learjet.

For any company or individual studying the use of a private aircraft, the most significant question is cost.

Many owners arrange for their aircraft to be available for charter when not in use.

That can mean big savings, and the realisation by the charter customer that travel by corporate jet provides worthwhile advantages over public transport. This was demonstrated by the Gulf conflict; charter operators reported increases in business from travellers seeking security impossihle for scheduled airlines.

The Business Aircraft Users Association, the British Helicopter Advisory Board and others, are fighting to keep as many airports as possible open for nse hy business aircraft, and seeking greater availability of smaller airfields.

Michael Donne

British Aerospace 125-800 corporate jet: popularity fuelled by dissatisfaction with airlines

David Fishlock on developments in composite materials

Big clean-up is under way to avoid microscopic flaws

WHAT seems to separate "high-technology" – such as in aerospace – from other technology is the attention to industrial hygiene required to make it work. Aerospace requirements push many components close to the limits of their materials. Under these conditions small flaws, of no consequence normally, can grow very rapidly, with consequences that can be catastrophic. The source of those flaws is often microscopic amounts of impurity – just plain dirt.

A big debate is taking place in the aerospace indnstry about the best way to get cleaner materials for the most highly-taxed components such as turbine discs and blades in the engine, and undercarriage parts for the airframe. By cleaner is meant not just the amount of impurity but the nature, size and distribution of any inclusions. Can the suppliers reduce the maximum size of any inclusions from under 100 microns to 50, perhaps even to 25 microns?

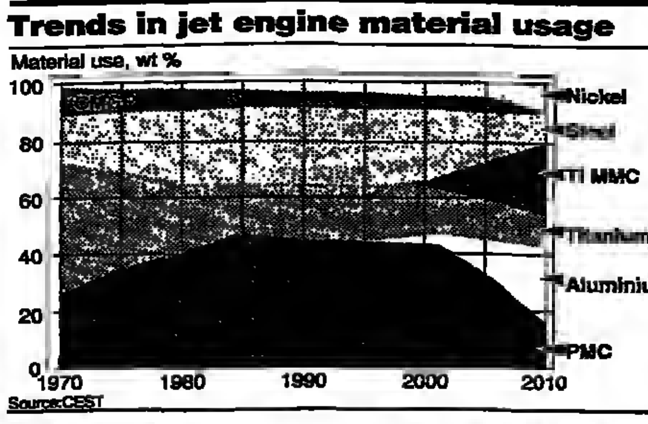
In principle, a less flawed turhine disc could mean a smaller one, spinning faster; hence more power from a lighter engine. But the smaller the disc, the higher the stresses and the smaller the defect that the disc can tolerate.

The designer tries to guarantee that the part will never fail by specifying that his materials must contain no defect greater than a certain size, for example. But at these dimensions it is very difficult to be sure you can even detect every significant defect, much less be sure about its size.

One way of making cleaner metal for aerospace and other highly critical applications is called cold-hearth melting. This avoids any risk of the molten metal – nickel superalloy, titanium alloy, etc – dissolving impurities from furnace linings.

The US and Japan can produce ultra-clean metal ingots as big as 10-15 tonnes hy cold-hearth melting; Europe cannot. Britain, for example, has nothing bigger than a demonstration cold-hearth furnace in Birmingham capable of making 50-kilogram ingots.

Trends in jet engine material usage



Source:CEST

This demonstrator, at the new Interdisciplinary Research Centre run jointly by Birmingham and Swansea universities, will be used to try to show how cleanness correlates with improved performance, and whether the investment of perhaps £5m in a commercial cold-hearth furnace can be commercially justified.

There are many designers in the aerospace industry who believe that they already have the materials needed to see them to the end of the century. What they lack is sufficient control over those materials.

In principle, a less flawed turbine disc could mean a smaller one, spinning faster; hence more power from a lighter engine

A new way of approaching materials technology is emerging, which aims to control manufacture – such as final purification – more tightly. Proponents claim that sufficient control alone will guarantee a sound product. By controlling the process they can also react more speedily when something strays from specification, before it produces a lot of scrap.

For example, if the final purification is being done hy plasma melting, it is possible to nse instabilities in the plasma arc as feedback for a very sensitive kind of process control.

Dr Boh Whelan, chief executive of the think-tank, the Centre for Exploitation of Science and Technology (Cest), talks enthusiastically of the industry taking a holistic approach to advanced materials, in which the aerospace engineer seeks total integration, all the way from design to manufacture, to meet a particular product specification.

Cest is a think-tank set up in the late-1980s by 19 research-hased British companias – among them Rolls-Royce and British Aerospace – to find ways of improving industry's exploitation of science and technology.

Instead of taking the traditional approach of making a material then manipulating it into the required shape, the materials would be made and shaped in the same operation, says Mr David Driver, a former Rolls-Royce engineer who last year became head of projects for Cest's first technology transfer venture, the Centre for Adhesives Technology near Cambridge.

The aerospace companies already have experience of this approach, dating from Rolls-Royce's attempts in the 1960s to make engine parts from glass, carbon and other strong fibres by "gluing" them into such shapes as hlades, and even whole snb-systems of engines.

Design studies suggest that if the engineer could fully exploit the hoop strength of continuously filament-wound parts, he could reduce the weight of important rotating components by 50 per cent, says Mr Driver. In an engine, a filament-wound annulns of composite msterial could replace a forged metal disc, for example.

But with this approach the designer can go a hig step further, Dr Whelan points ont. Into his composite component he can incorporate sensors that will report continuously on the state of the structure – the stress it is under, and how closely it is approaching its limit. The result is what is becoming known as a "smart material" – one that is self-monitoring. Adhesives technology can also extend this kind of smartness to metal components.

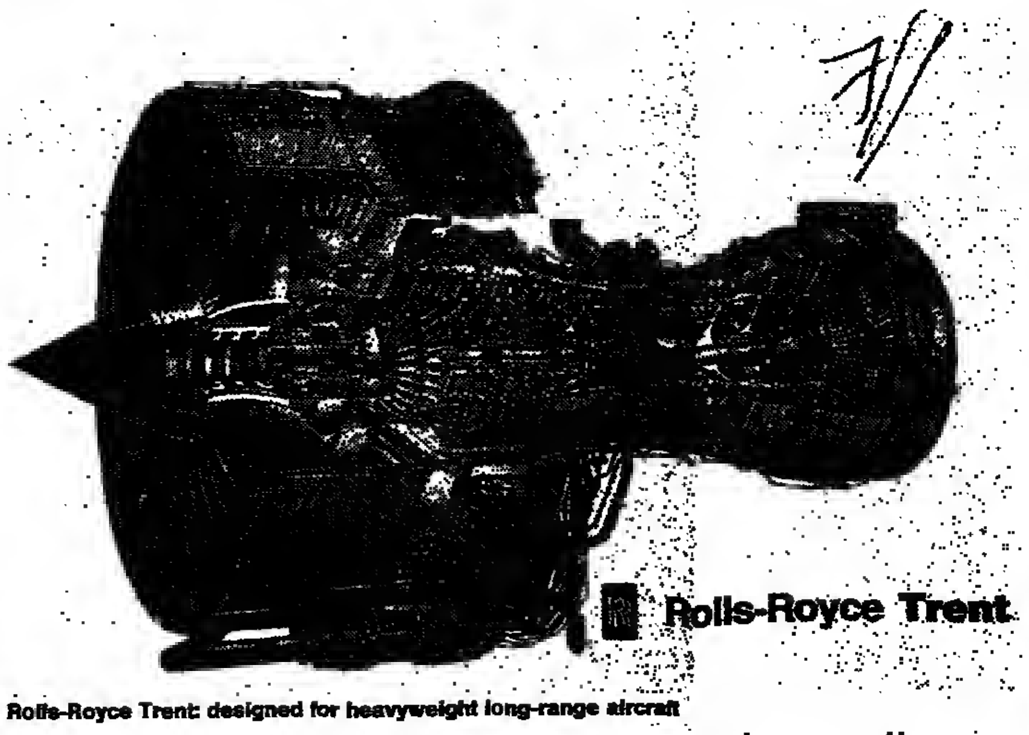
A Cest study* hy Dr Stephen Timothy, published this spring, offers some examples of the advantages of improved materials to the aerospace industries. Dr Timothy was looking, he says, for opportunities British industry might offer for cleaner, more consistent materials.

Aerospaca has provided some important examples. He cites, for example, the fact that a 10 per cent increase in the strength of an aircraft's steel undercarriage could reduce the weight of its landing gear by 5-6 per cent – some 200 kg for a typical 400-seat airliner.

Dr Timothy concludes that aerospace trends suggest a steady fall in the amounts of nickel, steel and titanium alloys used in the engine, and the emergence of composite materials early in the next century.

He suggests that the changing situation may call for a single advanced melting company to supply the required range of metal, metal-matrix and intermetallic products to aerospace specifications.

** Competitive metal processing by S.P. Timothy; The Centre for Exploitation of Science and Technology, 5 Aztec Road, Berners Road, London N1 OPW*



Rolls-Royce Trent: designed for heavyweight long-range aircraft

R&D projects are fewer but still demanding

Investment peaks

AEROSPACE requirements is one of the strongest forces driving commercial research and development today. Projects are fewer but no less demanding even if governments have cooled about meeting the cost of such expensive pipe dreams as Hotol and Hermes when prospective commercial support for space launchers is so scarca.

British Aerospaca, as Europe's biggest aerospace group, for example, spent more than £780m on research and development last year, of which £270m cama from the shareholders and the other two-thirds mainly from the pnhlic purse. Rolls-Royce, Europe's higgest aero-engine group, spent £273m (up from £161m in 1989), largely to fund tha development of its new heavy-thrust Trent engine. The company reported that 1990 "saw the peak of the research and development investment programme, designed to provide a full and competitive range of civil and military aero-engines". It claims the R&D programme has doubled its market share in the civil engine sector.

To put the figures in better perspective, the total spent on R&D hy these two companies exceeds the puhlic commitment to academic science in Britain as represented hy the £1bn "science budget" voted by parliament in support of the five national research councils this year, underpinning science in higher education. A few million pounds from the aerospace industry's hudgets will also find their way into the universities, in for instance Rolls-Royce's long-term support of Warwick University as an integral part of its plans to introduce lightweight ceramic engine components early in the next century.

Another important component of the UK effort in aerospace R&D is the Defence Research Agency, horn on April 1 this year. This is the organisation which amalgamates the non-nnclear defence research establishments such as the Royal Aerospace Establishment, Farnborough, into a single agency headed hy Dr Nigel Hughes, former director of the Royal Signals and Radar Estahlishment, Malvern. Its headquarters are at RAE Pyestock.

The Defence Research Agency is one of several new technical agencies established within the British Civil Service "to improve efficiency, effectiveness and the quality of service through a more business-like approach". It has about 12,900 employees and a hudget this year of abont £690m. About 90 per cent of this budget comes from the Ministry of Defence, and 10 per cent from the Department of Trade and Industry. One important objective is to attract commercial and overseas cash, for example by renting its immense development resources and facilities by way of ranges, test tracks and wind tunnels.

The agency is to remain a government organisation. "I do oot believe that privatisation is an option – or is likely to becoma one in the foreseeable future", Dr Hughes says. He also believes its present status will prove stable in any government change.

The agency must tread a narrow line between the commercial objective of maximising its income from the private sector, tha national requirement for a source of independent advice to government on the feasibility and progress of its main investments in new national and international projects such as the European Fighter Aircraft (a £7bn development programme of which the UK share is £2.5bn). But it can no longer rely on the Defence Ministry's support but must be prepared to compete for its contracts with other UK and overseas research centres. As its founding chief exectitive, Dr Hughes says he has been determined "that we should remain the scrupulously honest and moral organisation that we now are".

Outside the Defence Research Agency, and still controlled by the Defence Ministry, are the nuclear weapon estahlishments – principally the Atomic Weapons Establishment, Aldermaston – which design, develop, make and maintain Britain's nuclear warheads. This is Britain's nuclear weapon industry. It has also come under new management, however, as a result of an inquiry conducted for government by Lord Tombs, Rolls-Royce's chairman, into delays in making the latest warheads.

Although it plainly had management and recruitment problems, the new facility it has designed for handling fissile materials such as plutonium is serving as the basis for a similar facility planned for the Los Alamos National Laboratory in New Mexico, where the first nnclear weapons were invented. "Research and more particularly the careful development of new, safer and more capable warhead designs is the core of AWE's business," says Dr Ken Johnson, director of research and development. Its latest mission is to develop a new "smart" warhead for the RAF to replace its freefall thermonuclear bomb.

Europe's first satellite wholly devoted to remote sensing, the two-tonne ERS-1 spacecraft, designed for sun-synchronous orbit at 780km altitude and a life of three years, is the higgest, heaviest and most complex satellite yet designed hy the European Space Agency.

Britain's £70m contribution to this project includes the microwave sensors that will permit ERS-1 to penetrate cloud cover and darkness. Its data will be available through the new £20m Earth Observation Data Centre set up at Farnborough hy the British National Space Centre.

But Britain backed out, in 1987, of several expensive ESA projects, including Germany's Hermes Spaceplane proposal, for which the Paris-based ESA is seeking approval from the European Council of Ministers this year.

David Fishlock

Airlines are braced for greater scrutiny by the EC, writes **David Gardner**

Europe heads for open skies

EUROPEAN airlines, reeling from the recession, the consequences of their expansion throughout the 1980s, and the extraordinary losses caused by the Gulf war, must now brace themselves for the third phase of the EC's drive towards "open skies".

The overall aim of EC aviation policy is to have a fully liberalised industry by 1993. The Commission is also using its competition policing powers to prevent monopolistic mergers, more and more likely under the dual pressure of falling profits and deregulation.

The EC's deregulation drive spluttered into life with a first package of measures agreed by member states in December 1987. This loosened government-to-government agreements to share passenger capacity and revenue between established carriers, conceded the principle of allowing airlines to set cheaper fares without reference to their governments, and introduced measures to allow easier access to new compentors, into a market which until then was a cartel.

This package had minimal impact until it was strengthened through a second set of laws in June last year. These allowed higher fare discounting, further reduced airlines ability to share capacity, and gave Brussels powers – since enhanced – to stamp out predatory pricing.

This is the fixing of artificially low fares by large carriers, prepared to take temporary losses to drive smaller competitors out of business.

Commission competition and transport officials concede, nonetheless, that both these packages have so far failed to lower prices significantly, but underline that they have begun to bring pressure on airline costs.

But this cosy world will come to an end if Brussels gets through its third aviation package between now and January 1993. This genuinely open skies policy includes radical proposals on:

■ Airline licensing. From July next year common rules detailing capital adequacy and technical fitness will replace national licensing systems now used to reinforce national monopolies. This is potentially the single most important weapon against barriers to new entrants. But, a senior transport directorate official cautions, "its efficacy depends obviously on where the levels are set."

■ Double disapproval. This would mean that new fares proposed by airlines could only be blocked if both governments at each end of the route opposed them, rather than one, as at present. "The more liberal end of the route wins," a senior competition official explains.

■ Cabotage. This would allow airlines from one member state

Van Miert: slots unpopular

to offer domestic services in another.

■ Fifth freedom. The right to take on board and deliver passengers at intermediate points on scheduled routes.

■ Slots. A measure to force established carriers to loosen their stranglehold on landing and take-off slots at hub airports. The idea is that slots which are unused or suddenly become available should be pooled, and at least half apportioned to new entrants.

All this, it should be stressed, is the Commission's optimum programme; it is most unlikely to pass through the member states undiluted. On slots, for instance, Mr Karel Van Miert, EC transport commissioner, says: "It doesn't look as though we'll get an early decision. Some governments don't like it and most airlines don't want it."

Early evidence of flag airlines' misgivings about liberalisation emerged as a result of the Gulf war's catastrophic effect on their earnings. The Commission agreed to a three-month package of alleviating measures by, for instance, allowing carriers to band together and share capacity on routes which would not otherwise be serviced because of the fall-off in passengers.

Unimpressed with the scheduled carriers' calls for further relaxation, the Commission has increasingly turned from its regulatory to its competition powers to try to even the contest for smaller airlines. It is also straining to ensure that the restructuring of the industry – built in to the logic of liberalisation – goes ahead on fair-ish terms. Opinion is divided about its success.

Air France, for example, was last year allowed to merge with Air Inter and UTA, two smaller national rivals. Brussels extracted the surrender of eight domestic routes, and the divestiture of Air France's 35 per cent stake in TAT, the French regional airline, as its competition price.

Brussels also objected to the now defunct Sabena World Airlines (SWA) joint venture between the Belgian flag carrier, British Airways and KLM of the Netherlands.

The Belgian government has since decided to refloat the airline through \$1bn in state aid, about half to write off debt and half to restructure. Brussels must approve the recapitalisation, and is also examining Paris's plans to endow Air France with nearly \$400m in fresh capital.

Senior Commission officials say the Sabena package is likely to be approved, provided there is a commitment that this is the last state bail-out, and it makes more room for other operators. If, once its balance sheet is clean, Sabena succeeds in finding a partner from a list of suitors including BA and Air France, it will have to satisfy Brussels that it will not be monopolising the sort of routes it would have done under the SWA deal.

Tornado: production programme has entered its final stages

UK AEROSPACE INDUSTRY

In the throes of a profound shake-up

THE UK aerospace industry, the country's biggest exporter of manufactured goods, is in the throes of profound restructuring.

The decline in government defence spending and shrinking defence export markets in the wake of east-west detente have accelerated the efforts of UK defence and aerospace groups to increase their presence in the commercial aerospace market as well as to seek new opportunities to diversify operations. But, as if defence cuts were not bad enough, the commercial aerospace sector has now also entered a period of uncertainty and financial turbulence.

The sweeping job cuts involving more than 20,000 people announced by UK defence and aerospace companies are an eloquent reflection of the magnitude of the industry's problems. The Gulf war has had little impact on the underlying trend of long-term reductions in defence spending, while the financial crisis of the airline industry has increased the risk of deferments and cancellations for new commercial aircraft orders.

Unless the airline industry recovers before the end of this year, aerospace manufacturers acknowledge the commercial side of their business will feel the pinch. But the industry remains confident about the longer-term growth prospects for commercial aerospace, driven by the steady growth of air travel demand expected to average about 5.75 per cent a year during the 1990s. The question, however, is how rapidly the industry will recover its traditional growth pattern interrupted by the Gulf war and the economic recession in the UK and in other western markets.

British Aerospace and Rolls-Royce, the UK's two leading aerospace groups, have reacted by restructuring their defence and commercial aerospace operations as well as by seeking greater diversification to give their groups a more balanced and counter-cyclical portfolio of activities.

BAe has conducted reviews of its military and commercial aircraft businesses. The military aircraft review resulted in the decision to close two plants at Preston, Lancashire, and Kingston-upon-Thames by early 1993, with the loss of 5,000 jobs. The review of military operations was precipitated last July after the government cancelled 33 Tornado combat aircraft for the RAF.

With the Tornado and Harrier programmes entering their final stages, BAe was under pressure to rationalise its military aircraft operations. Moreover, there is still uncertainty over the scale and timing of the start-up of production of the European Fighter Aircraft (EFA), the three-nation European fighter aircraft which will replace the Tornado.

The industry remains confident about the longer-term growth prospects for commercial aerospace

The military aircraft review was followed by a similar exercise in BAe's commercial aircraft division. The study, completed in March, will involve about 2,500 job cuts. BAe plans to rationalise assembly of its 146 regional jet by making Woodford, near Manchester, the sole site for final assembly of the 146 and ATP turbo-propeller commuter aircraft.

BAe explained that the restructuring of its military and commercial aircraft operations had become "imperative" for maintaining a competitive position. Even though the company expects its 20 per cent stake in the European Airbus programme to become a dominant part of its commercial aerospace activities, it is under pressure to continue improving productivity and reducing costs in the face of the competition in the commercial aerospace market for large airliners and smaller regional and commuter aircraft.

Rolls-Royce has also begun restructuring its military and commercial aircraft engines divisions involving cutting the company's 60,000-strong workforce by 6,000.

The company is now committed to heavy research and development spending on its new large Trent engine programme. But it is facing fierce competition from its two larger US rivals, Pratt & Whitney and General Electric, in the emerging market for heavy thrust engines to equip the new generation of wide-bodied aircraft being developed by Boeing, McDonnell Douglas and the European Airbus consortium.

BAe and Rolls-Royce, like most of the UK aerospace industry, continue to seek greater collaboration and partnership ties with other international aerospace groups.

Rolls-Royce has reached a partnership agreement with BMW of Germany in the aero-engine sector. It is also discussing co-operation in new supersonic and military engines with Snecma of France. Rolls-Royce has acquired the NEI engineering company while BAe has diversified into motor vehicles, construction and property, telecommunications and airport, among other sectors. In the defence business, BAe is increasingly setting its sights on becoming a prime contractor of large defence related services.

UK aerospace components manufacturers have also been seeking to increase their business of supplying parts and systems to the commercial sector to offset the decline in their traditional military business.

The new Boeing 777 wide-bodied airliner programme has recently been providing welcome new orders for UK aerospace suppliers such as GEC-Avionics, Smiths Industries and Hawker Siddeley. GEC-Avionics also recently won orders worth more than \$500m to supply flight computers and cockpit display systems for the next generation of US stealth fighter aircraft, making it the only large British supplier for the new US Advanced Tactical Fighter (ATF) to be built by a consortium including Lockheed, Boeing and General Dynamics.

Paul Betts

UK AIRLINE INDUSTRY

Policy overhaul adds to problems of carriers

THE past few months have seen the biggest overhaul in British civil aviation policy since the privatisation of British Airways four years ago. But the government's decision to accelerate the process of opening the UK skies to greater competition has also coincided with one of the deepest crises in the history of the industry.

During the past three months, a series of events and decisions have turned the industry upside down. On the regulatory front, Mr Malcolm Rifkind, the transport minister, scrapped most of the London air traffic distribution rules and abolished the 10-year-old restrictions which had barred many scheduled airlines and charter operators from Heathrow, the world's busiest international passenger airport.

The government also negotiated a new bilateral aviation agreement with the US which has further intensified competition at Heathrow by allowing United Airlines and American Airlines, the two strongest US carriers, to replace Pan AM and TWA, at London's leading airport. The new bilateral agreement and the change in air traffic distribution rules also cleared the way for Virgin Atlantic, the carrier owned by Richard Branson, to compete against BA on the Heathrow to US routes.

The Heathrow decision has also increased competition on lucrative long-distance routes to the Asia-Pacific region with airlines such as Cathay Pacific and All Nippon Airways starting Heathrow services to Hong Kong and Tokyo. To boost competition even more and encourage the development of a multi-airline industry in Britain, Mr Rifkind endorsed a Civil Aviation Authority ruling stripping BA of two of its slots at Tokyo's Narita airport and handing them to Virgin Atlantic to give Mr Branson's airline a better chance to compete on the London-Heathrow route.

But although these moves have been described as "a triumph for fair competition" and "a start of a new era in UK aviation history", they have provoked considerable controversy and concern in parts of the industry worried by the implications of these various decisions on British aviation at a time of crisis. Indeed, the sector suffered one of its biggest airline collapses with the failure of Air Europe the week the government scrapped the old Heathrow access rules.

Even before the collapse of Air Europe, four other smaller UK carriers folded during the past 12 months. The crisis in the industry and the implications of the recent government decisions have also had profound repercussions on the rest of the airline sector and, in particular, on BA.

Like other international airlines, BA has been badly hit by the slump in the industry caused by the combined effects of the Gulf war, higher fuel prices, economic recession and the decline in air travel.

In February, BA traffic had fallen by as much as 27 per cent compared with the same period last year.

But apart from the general recession in the industry, the recent government decisions have been a setback for BA. The opening up of Heathrow has hit BA at the heart of its main operating base. And while the new bilateral aviation accord with the US has given BA greater access into the US market, the arrival of new, stronger US airlines at Heathrow has stepped up competition on transatlantic routes, traditionally big money earners for the UK carrier.

BA vigorously opposed the British government's latest moves arguing that they would weaken the airline's competitiveness against other national carriers whose governments actively supported their efforts to develop globally.

But BA has not stood still. It launched in April an unprecedented promotion offering 50,000 free tickets in an effort to revive its business and encourage people to travel on the airline. The airline is also continuing to seek new European hubs at Brussels and Berlin to position it strongly in the European market ahead of the liberalisation of European air transport in 1992.

Although the collapse of Air Europe is an eloquent reflection of the turmoil afflicting the industry, it has also in the longer term helped rationalise the sector. Dan-Air, the other Gatwick-based airline struggling for survival last year, has been one of the main beneficiaries of the demise of Air Europe. The airline's restructuring prospects have now been greatly boosted and Mr David James, its new head, is seeking to expand Dan-Air's European scheduled airline business.

The failure of Air Europe has had beneficial effects for other charter carriers such as Britannia and Air 2000. These charter airlines have seen their business prospects considerably enhanced by the removal of a large competitor.

However, the rapid changes in the UK's aviation regulatory regime have exposed a number of problems which will have to be addressed if the government's "open skies" policy is to succeed fully. The biggest is undoubtedly the allocation of take-off and landing times, known as slots, at Heathrow. Although the scrapping of restrictions at Heathrow has enabled airlines, previously barred from the airport, to apply for rights to serve the airport, they must also find the necessary slots to operate their new Heathrow services.

At present there are few, if any slots available at peak hours at Heathrow. The government is studying the issue and is expected to introduce at some stage a new system to ensure available slots for new entrants.

But perhaps the most pressing problem of all is the financial squeeze facing the airline industry as a whole. The squeeze is particularly severe for smaller carriers. Unless they can secure the necessary financing to support new services, the development of a multi-airline industry in the UK might be compromised.

Paul Betts

Richard Branson: competing with BA out of Heathrow

GERMANY

Pell-mell expansion has sparked controversy

WITH uncertainties clouding the defence sector and the international airline industry staggering under recession and the aftermath of the Gulf war, this hardly seems an ideal moment to diversify into the aerospace business.

Yet that is the goal of Daimler-Benz, Europe's largest vehicle manufacturer, which over the past six years has built a substantial presence in the industry by taking over all Germany's principal aerospace and defence companies.

Daimler's acquisition of manufacturer Dornier in 1985 was followed by the purchase of control of diesel and aero engine maker Motoren und Turbinen Union (MTU) and, in 1989, of the federal government's 51 per cent stake in Messerschmitt Bölkow Blohm (MBB), the country's biggest aerospace and defence group.

The pell-mell expansion has sparked lively controversy. Some question the industrial logic of the acquisitions and doubt whether even a company with Daimler's management and financial strengths can handle such radical diversification.

Others fear the strategy may succeed too well. They include those in Germany hostile to the defence industry and aerospace companies in other countries worried they may soon face a powerful new competitor backed by the resources of the German government.

Daimler says two motives lie behind its strategy. One is to offset the impact of stagnating vehicle sales by acquiring a stake in high-technology growth markets. The other is to apply advanced technologies from its new acquisitions to its cars and trucks.

However, there are still a number of difficult hurdles. The first is to weld together its disparate aerospace and defence interests. Though they have been grouped in a new division, Deutsche Aerospace (Dasa), their structure has yet to be rationalised and their management integrated.

Some question the logic of the acquisitions and doubt Daimler can handle such diversification

A still bigger challenge Daimler has set itself is to transform its aerospace operations from their post-war role as mere sub-contractors into a broadly-based business with the skills and resources needed to act as leader of large international projects.

To do this, it is counting partly on corporate alliances designed to enlarge its range of technologies and experience and to provide the scale needed to be a credible bidder on international programmes.

In the past 18 months, MTU has joined forces with Pratt & Whitney of the US in aero engines, while MBB's helicopter interests have been placed in a joint venture with Aérospatiale.

More recently, Dasa has linked with Aérospatiale and Alenia of Italy to make and market their regional aircraft and develop jointly a proposed 130-seater commuter jet.

However, Dasa is still looking for a big programme to lead. The company cannot count on help from the defence side of its business, where orders are set to decline once production of the Tornado – its only fixed-wing military project – ends next year.

Indeed, it may have difficulty keeping its military production lines occupied unless the German government overcomes its recent hesitation about whether to back the planned European Fighter Aircraft (EFA) beyond the development stage.

In the civil field, Dasa has a large backlog of Airbus work. However, though the company is a big shareholder in the Airbus Industrie (AI) consortium, it produces the technically less sophisticated parts of the aircraft.

Furthermore, adverse exchange rate movements have undermined the profitability of such work. Even though the German government indemnifies Dasa against losses caused by weakness of the dollar – in which aircraft sales are priced – the US currency had until recently sunk below the DM1.60 rate beyond which the guarantee runs out.

To make Airbus more efficient, Daimler has been pressing to have the AI consortium turned into a proper commercial enterprise under independent management. But while that could make the programme more profitable, it would be likely to reduce rather than increase Dasa's industrial involvement in it.

Daimler-Benz chairman Edzard Reuter: diversification policy

Hence, Dasa is pinning ambitions for project leadership on the proposed joint venture to develop a 130-seater commuter aircraft, in which it would initially own a 50 per cent share.

But the project is politically highly controversial.

The issue seems likely to be resolved in Bonn, which will be asked by Dasa later this year to finance half its share in the cost of developing the proposed 130-seater. According to Mr Jürgen Schrempp, Dasa's president, the programme will not be viable without subsidies.

The request threatens to confront the federal government with a difficult choice. Its budget is already stretched by the costs of German unification, and to grant aid on the scale required by Dasa would be likely further to enrage the US, which is already deeply exercised about government subsidies to Airbus.

The aerospace and defence businesses worldwide have long been driven as much by politics and national prestige as by hard commercial logic. How the German government reconciles these different impulses is likely to have wide-ranging implications not only for Dasa but for the future direction of the industry in the rest of Europe.

Guy de Jon...

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Leslie Colitt assesses the choices for planners

Three sites for new Berlin airport

THE aearcb for Berlin International, the future airport which will serve the Berlin region of 5.2m inhabitants, has narrowed to three possible sites.

One of them is a Soviet military airfield at Sperenberg south of Berlin which is to be handed back to tbe German government by 1994. The airbase lies well to the south of Berlin in a sparsely-populated area as does an alternative site on Genshagener Heath. Botb would be connected to the capital by a rapid rail system.

The third and least costly choice would be Schönefeld-Süd near the existing Schönefeld Airport just outside Berlin.

This solution, however, is rejected by officials of the city and the adjoining state of Brandenburg. They note that an enlarged Schönefeld Airport wonld be environmentally undesirable and that its location on the eastern periphery of Berlin makes access difficult from the western part of the city.

A study of Berlin's future air, rail and road traffic by the Daimler-Benz group – which is a producer in all three transport sectors – stressed the urgent need for a new airport.

It noted that Tegel airport in west Berlin and Schönefeld airport could be expanded to a maximum of 24m passengers annually in the next 20 years. By 2010, however, Berlin would generate air traffic of well over 30m passengers.

The new airport was likely to take over the functions of both Tegel and Schönefeld, the study said. It would serve as a "crystallisation point" for industrial and service companies which would locate in the area.

Mr Robert Grosch, head of Berlin's Airport Company, estimated the cost of a new airport with a capacity of 50m passengers at up to DM12bn ($7bn).

An investment of this magnitude, however, only made sense if the other Berlin airports were closed down. But he questioned whether such a mega-airport was the hest answer for Berlin.

Instead of one giant facility which in any event would not be operational until about 2010, be favoured maintaining two airports for Berlin.

It was widely assumed until now that Tegel airport in west Berlin would be closed down after a new airport was built. Tegel has reached its limits of 7m passengers and, in a stop-gap measure, is to be expanded to handle 12m.

Mr Groscb suggested that Tegel could be maintained well into the next century and would be able to bandle category 4 (low noise) aircraft which would satisfy noise-plagued citizens.

An attempt last year to shift some of the newly-arrived airlines in Berlin from Tegel to Schönefeld Airport met with howls of protest.

Only Lufthansa, the German airline, agreed to use Schönefeld – with its "socialist charm", as one official put it – but withdrew earlier this year under pressure from disaffected passengers.

A study of future air, rail and road traffic stressed the urgent need for a new airport which would serve as a crystallisation point for industry and services

Schönefeld handled 3m passengers in 1989 but has been hit by the collapse of east Germany's former state airline Interflug.

Schönefeld is to be modernised and expanded to a capacity of 5.5m passengers in the next few years. A consortium of companies, including Mannesmann, AEG, Deutsche Aerospace and leading German hanks has agreed to invest DM300m to this end.

The consortium noted that Schönefeld could be expanded to handle up to 27m passengers within 20 years at a cost of nearly DM4bn.

Expanding Schönefeld into the main airport for longer-haul flights would thus have the advantage of lower costs, a location much closer to the city centre and an earlier completion date, Mr Grosch argued.

Mr Burkhard Kieker, head of Lufthansa's rapidly expanding base in Berlin, took a dim view of retaining either of the airports. Tegel could not be expanded without incurring the wrath of nearby dwellers while Schönefeld took more than an hour to reach from the centre of west Berlin.

This was longer than it would take for a fast train to reach a new airport built 30km or 40km from the city.

Such a new airport, which would hecome the third air hub for Germany, would match Munich II in modernity, Mr Kieker noted. Like Munich II and unlike Frankfurt Airport, BI would be an airport of short ways for passengers.

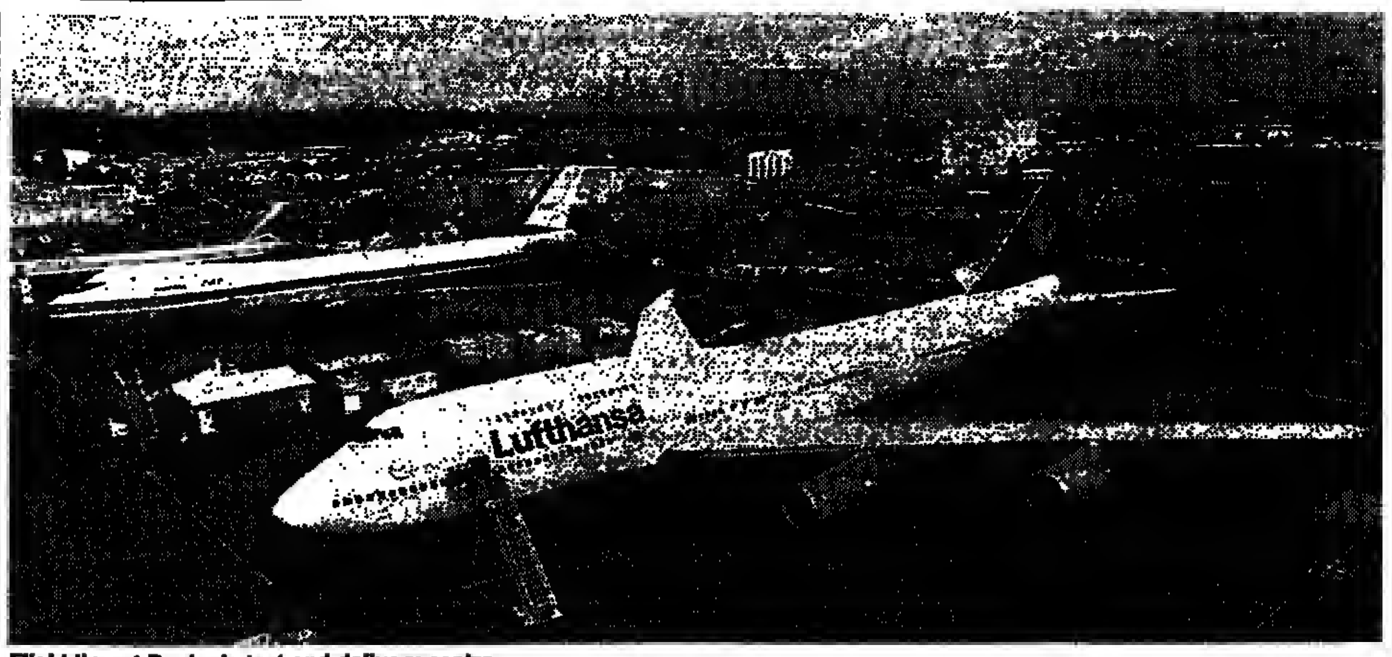
The terminal buildings would be located between two runways, approximately 1.5km apart.

Once the green light was given construction of BI could proceed rapidly as the plans for Munich II could be easily adapted to the new Berlin airport.

Mr Kieker noted that BI was likely to become the largest German airport as Frankfurt could not he expanded and Munich II had reached capacity even before it began operating. This was yet another reason the new airport should be located in a thinly-populated area to the south of Berlin.

One of the few near-certainties at this point is that Tempelhof airport in the heart of Berlin which dates from the 1930s will be phased out once the US Air Force base there is vacated in 1994.

In addition to Lufthansa, which is now the leading user of Tegel Airport after taking over the inner-German service of PanAm, a flock of new carriers have been attracted to the city. British Airways, faced with the prospect of having to reduce its inner-German service by 20 per cent annually, has joined with a German consortium to create a new airline of German registry which is to continne the service and expand it to other European destinations.



Flight line at Boeing's test and delivery centre

Pentagon cuts force US aerospace industry to switch focus

Banking on civilian orders

THE US aerospace industry is in the middle of a radical shake-out as it grapples with a sharp downturn in American defence spending and nervously eyes its record backlog of civilian aircraft orders for signs of this side crumbling too.

Thousands of workers have been laid off and capital budgets slashed at the leading defence contractors over the past two years as companies restructure to cope with a world where the Pentagon's equipment budget is falling rapidly.

The process is far from over. For example, Mr William Anders, the chairman of General Dynamics, the number two defence contractor, expects the company's payroll to shrink some 35 per cent between now and the mid-1990s, from 92,000 today to around 60,000.

The change in the defence outlook is also forcing aerospace companies to make important long-range decisions over their management systems and strategic direction. For example, McDonnell Douglas, the largest defence contractor, has spent the past two years introducing the leaner production methods advocated under the Total Quality Management system.

General Dynamics is cutting back on its research budget, rather than simply hoping to recoup R&D costs in production runs.

Lockheed is diversifying away from aerospace, trying to utilise its skills in handling large contracts for government departments in fields such as environmental controls and airport development.

Behind such initiatives lies the fact that US defence spending is likely to drop by around 5 per cent a year over the next five years.

The space-related business looks much healthier, but even here hopes of increased business in the 1990s may he dashed. Only this month a congressional sub-committee voted to end 1992 funding for the supposed centrepiece of the government's space programme – a vast ontpost in space which could house four astronauts.

The industry is hoping that some of this pain will be alleviated by strength on the civil aviation side, where the two large US manufacturers, Boeing and McDonnell Douglas, are sitting on order hooks worth more than $100bn.

But the sharp drop in air travel produced hy the Gulf war, together with the financial problems of the US airline industry and a general global economic slowdown, could sharply reduce that figure.

The biggest short-term effect of the slowdown in traffic has been on aero-engine manufacturers, whose most profitable business is the supply of spare parts. Fewer flights and tighter inventory controls hy airlines have meant a drop in engine spares business, forcing lay-offs at Pratt & Whitney and General Electric.

The aircraft manufacturers themselves profess to be sanguine, arguing that any Gulf-related loss of traffic will be a very temporary blip. They say they have yet to see a significant downturn in the order book and they argue that, over the long term, air traffic is bound to keep growing. Boeing forecasts that the size of the market will double hy 2005.

Boeing, the world's largest aircraft maker, is in good condition to withstand a sudden squall. It has the strongest balance sheet in the US industry and earned $1.38bn last year.

McDonnell Douglas has far less room for error. It leveraged itself up with debt to develop its new airliner, the MD-11, a wide-bodied three-engine jet, the successor to the DC-10. The MD-11 recently hegan rolling off its Long Beach production line, and it needs the cash flow from strong sales of the aircraft to help bring its borrowings down to a more comfortahle level.

Both companies also face considerable capital expenditure programmes over the next few years. Boeing, which makes four models – the 737, 757, 767 and 747, is developing the 777, a 400-seat twin-engined jet which will fill the market gap between the 767 and 747.

McDonnell Douglas makes only two civilian aircraft – the MD-11 and the medium-range MD-80. But it wants to develop a stretched version of the MD-11, called the MD-12X, which would compete with the Boeing 747-400. However, the capital costs will be so great that it is seeking equity partners from the aerospace industry to help bear the load.

For years McDonnell Douglas has relied on its profitable military side to bail ont its loss-making civil aircraft operations. But the run-down in defence spending means that the future of the company depends as never before on making the Long Beach operations consistently profitable.

While almost all the US defence companies will have to scale down their operations to some extent, the contraction of the sector through the 1990s will hit some companies harder than others, depending on their product mix and how successful they are in winning the few remaining contracts on offer.

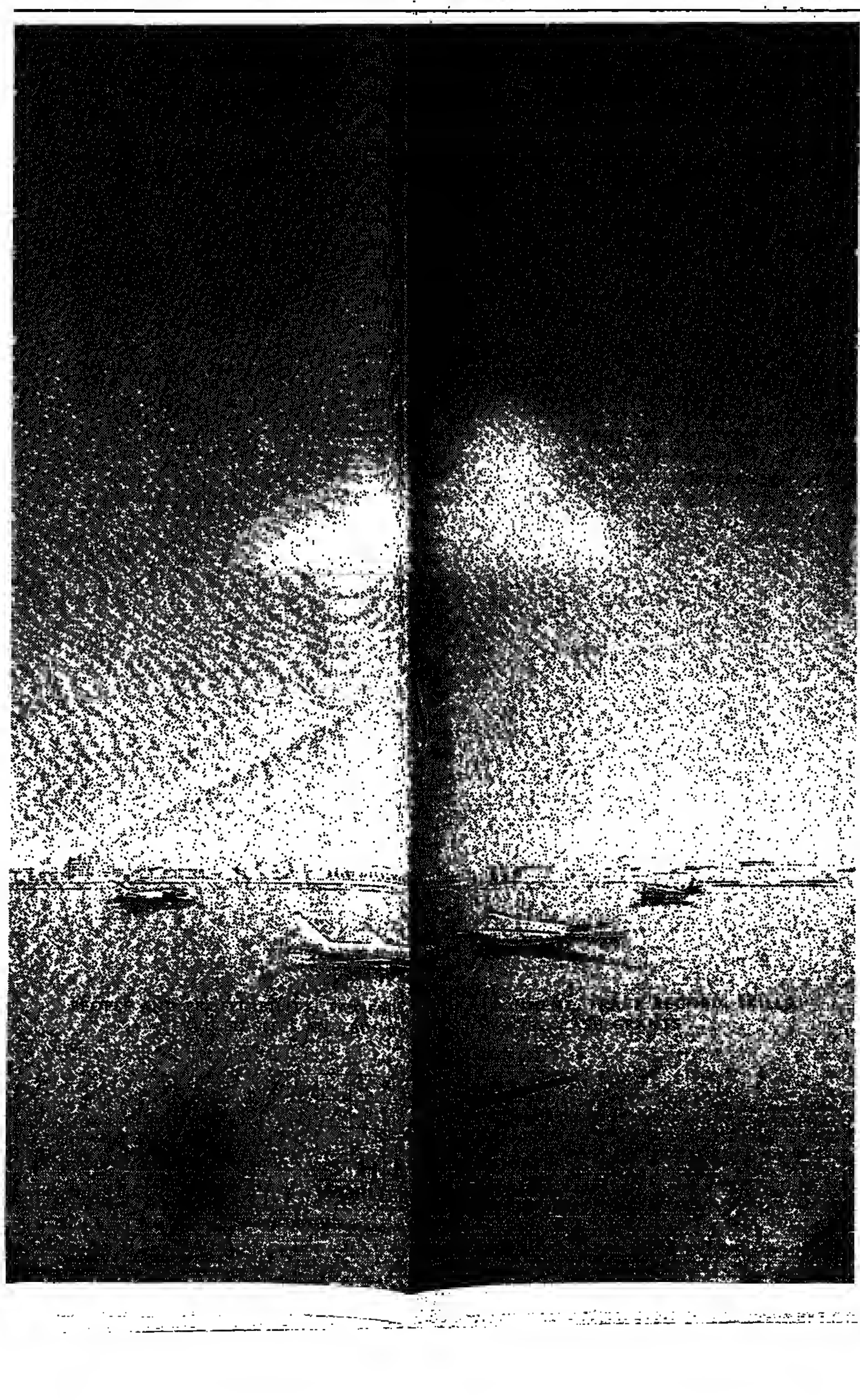
For example, a partnership between Northrop and McDonnell Douglas lost out in April to one comprising Lockheed, Boeing and General Dynamics for what is likely to be the last great defence jet contract of the century – the Advanced Tactical Fighter.

The outcome will have the most impact on Northrop, since it will increase its very heavy reliance on the B-2 bomber, a programme which has been cut back by the Pentagon and may be further reduced hy Congress. Northrop, which already makes fuselages for the Boeing 747 and other civil aircraft sub-assemblies, is now planning to expand the non-military side of its business.

Victory was not nearly so crucial for Lockheed, which got out of the civilian aircraft business in the 1981 slump, but the ATF will nnderpin the futnre of its aircraft operations.

Moreover, an agreement by the Pentagon to move away the fixed price contracts which it favoured during the 1980s should save Lockheed and its partners from big losses on the programme. Fixed price contracts have inflicted serious financial damage on several aerospace companies over the past few years, notably General Dynamics and McDonnell Douglas.

Martin Dickson



US AIRLINES

Limping carriers face a long battle for survival

TO SAY that the US airline industry has just been through a bout of extreme turbulence would probably be an understatement. In 1990, the sector is reckoned to have made a $2.4bn loss, with the bulk of that record figure falling in the last three months.

In part, these troubles stem from the same factors that have bedevilled airlines across the world. The cost of fuel – around 15-20 per cent of an airline's total operating expenses – rose sharply in the wake of Iraq's invasion of Knwait. Then the slump in international traffic, which developed when the Gulf war began and potential customers worried about terrorist threats, dealt a second blow early this year.

But Gulf-related problems are only part of the story. For a start, many airline companies had entered the Nineties with seriously overstrained balance sheets.

This financial weakness stemmed largely from the enthusiasm for leveraged deals in the previous decade, and the fact that many airline companies, with attractive assets and good cash flow, were ideal targets for this type of transaction. Trans World Airlines, Northwest Airlines, USAir and Continental, to varying degrees, all bear the scars of hefty debt-financing. The two largest US airlines, American and United, also came into the leveraged bidders' sights, but eventually escaped intact.

Moreover, the Gulf-related slump came at a time when the airlines' domestic market was already being hit by the slowing of the US economy. Domestic traffic was flat in 1989 and rose by only 2.2 per cent in 1990. Even in 1990 this modest growth was easily outstripped by the 5.5 per cent increase in capacity. In the early months of 1991 there has been a decline in domestic traffic, year-on-year, and some pundits suggest that this may continne for the whole of the year.

Finally, costs – fuel aside – have heen rising. On the lahour front, for example, Delta set the pace last summer when it gave its pilots a 12.5 per cent pay rise over the next four and a half years.

This combination of factors has had various implications:

First, from an operating point-of-view, the presence of so many struggling airlines has exacerbated price wars and led to a severe wave of price-discounting. These have generally been countered by the stronger carriers, winning back market share but reducing yields all round.

Second, a number of carriers have sought the protection of the bankruptcy courts. This trend was started hy Eastern Airlines in 1989, hut followed by Continental, Pan Am, and Midway, the smaller regional airlines, in either late 1990 or earlier this year. So far, only Eastern has passed from bankruptcy to an effective liquidation. Continental, by contrast, has struck an aggressive pose – repainting its fleet and insisting that it is more interested in expansion than downsizing.

Brave though this sounds, the carrier – which does have the advantage of a low-cost structure and some attractive assets – still has to persuade holders of its very substantial debt to swap into equity at some stage. Pan Am meanwhile, has survived in spite of an acute cash crunch during the winter, but many observers suspect that the only ultimate solution is for the airline to find a willing buyer.

While life has been acutely painful for the struggling carriers, it has at least offered opportunities for the larger, and financially stronger airlines. The likes of American, United and Delta have been aggressive purchasers of assets over the past 18 months – ranging from highly-publicised route deals to landing slots, gates and other facilities.

Perhaps the most contentious transactions were planned purchases by American and United of the Heathrow routes belonging to TWA and Pan Am respectively. Both deals provoked lengthy intergovernmental negotiations, but were eventually concluded to the US carriers' satisfaction.

The fervour with which American and United pursued these transactions underlines the importance attached to expanding international operations. It is easy to see why. For a start, international traffic has been a rapid growth area in recent years – in sharp contrast to the depressed domestic market. Moreover, both airlines appear to be setting down markers for a large role in international travel over the next decade.

Taken together, many observers argue that adds up to the last leg of a shake-out in the industry. In the wake of deregulation, in 1978, new low-cost competitors flooded into the industry. That, in turn, led on to a slow consolidation process – and the extreme profit pressures of the past few months have undoubtably accelerated this trend.

Many pundits suggest that only American, United and Delta are likely to make the category of "super-carriers", with vast international networks in the years ahead. The likes of TWA and Pan Am may yet limp along, but it is hard to see what their long-term future holds. And perhaps most interest will be focused on the middle-ranking carriers – USAir, Northwest and Continental – who may face a long battle, hut certainly possess some ammunition, as they try to remain in the survivors' category.

Nikki Tait

CANADA

Clouds on the horizon

TWO events in May sum up the combination of promise and pitfalls which seem to mark the future of Canada's aerospace industry.

In Montreal, spirits were buoyed by the first flight of Canadair's 50-seat Regional Jet. With deposits paid on 100 aircraft, Canadair is confident this enlarged version of its Challenger hnsiness jet will garner a large slice of the commuter aircraft market.

The mood was more glum, however, at Toronto-based De Havilland of Canada. Senior executives of Aérospatiale of France and Italy's Alenia, which have proposed buying De Havilland, announced they would need up to C$500m in government aid to ensure the viability of the struggling commuter-aircraft maker.

"There's a fair degree of optimism for civil aviation," says Mr Ken Lewis, president of the Aerospace Industries Association of Canada, "but it's clouded by what's going to happen to De Havilland."

De Havilland, venerahle maker of the Tiger Moth, Twin Otter and more recently the four-engine Dash 7 and twin-engine Dash 8, has reached a crossroads.

The two European companies want to buy De Havilland from Boeing to give them a manufacturing and marketing base in North America. But they also recognise the need for crucial surgery on a company which has lost money for most of the past decade and settled only one round of recent labour negotiations without a strike.

Alenia and Aérospatiale have made it clear that whether De Havilland continues as a builder of sophisticated aircraft or is reduced to a parts maker will depend largely on inducements from the Canadian and Ontario governments, and the co-operation of the 5,000-member workforce.

"If there is no water, the plant won't grow," was the way Alenia's president Mr Fausto Cereti put it.

Pending government decisions are crucial to the future of several other areas of Canadian aerospace.

One is the New Shipborne Aircraft (NSA) programme, a collaborative effort involving the Canadian, Italian and British navies. Canada could order up to 50 helicopters under the NSA programme, most of which would be used in conjunction with the new frigates under construction at shipyards in Quehec and New Brunswick.

Ottawa is considering a bid submitted by European Helicopters, a consortium of Britain's Westland Helicopters and Agusta of Italy. The avionics for the Canadian component would he supplied hy Montreal-based Paramax, a subsidiary of the US computer systems group Unisys.

A military evaluation team expects to submit its recommendations on price and industrial benefits to the government by the end of June. But a go-ahead for the NSA project has been delayed for so long its initials are now known in the industry as No Such Aircraft.

But a defence department official acknowledges that with decisions to be taken by the Italian and British governments too, "there may be reasons beyond our control why it may not be possible".

On another front, a decision is expected by autumn on bids to privatise pilot training for the Canadian armed forces. The main contenders are a consortium including British Aerospace and Canadian Helicopters; Canadair; and CAE, the Toronto-based suppliers of flight simulators.

In civil aviation, the government is at an advanced stage of negotiating the purchase of 42 microwave landing systems from Micronav, a Nova Scotia company owned jointly hy Canadian Marconi and the IMP Gronp of Halifax. The company expects a contract to be finalised by mid-summer.

The slump in orders for aircraft engines has forced Pratt & Whitney Canada to lay off 1,200 workers, about 10 per cent of its workforce. The company's Montreal factory specialises in gas turbines, mainly for the general aviation and commuter-aircraft market.

Even Canadair, maker of the new Regional Jet, has been forced to trim its sails. Orders for several RJs have been cancelled or downgraded to options. The company expects to deliver 22-24 Challengers this year, about the same number as 1990, but well below the target of 30.

Besides gearing up for the RJ, Canadair has put much of its energy into dovetailing its operations with Learjet, the US business jet maker bought by Canadair's parent Bombardier a year ago.

Bernard Simon

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HONG KONG

Airport uncertainty upsets plans

HONG KONG'S airlines confess to mixed emotions. Cathay Pacific Airways and its associate Dragonair, which concentrates on the China market, fared better in 1990 and expect a better 1991 than many of their international competitors. But negotiations on a new Hong Kong airport have run into controversy and leave the future uncertain.

Hong Kong wants to build a two-runway airport to replace Kai Tak, the present one-runway airport which is out of date and could reach capacity in the next couple of years. But the project has been delayed because China is worried the cost of the new airport, about HK$100bn ($13bn) for the first phase, will drain Hong Kong's financial reserves in the lead up to the colony's return to Chinese sovereignty in 1997.

A planned opening date for the first runway in 1997 is in doubt. Mr Peter Sutch, managing director, Cathay Pacific Airways, described the delay as "worrying and frustrating". Cathay's long-term aircraft planning could be affected because any delay for the new airport will mean the company has to cope with an overcrowded Kai Tak for longer.

Cathay Pacific, which is controlled by Britain's Swire family, reported profits fell 9.8 per cent to HK$2.99bn last year as its long-haul routes to Europe and the US, as well as routes to Japan, were affected by the Gulf crisis and economic recession. Profits are unlikely to improve this year after a weak first four months.

Mr Sutcb said load factors were back above 70 per cent, compared to 75 per cent last year. But it could take until next spring for a full recovery. "We are fortunate to have a strong short-haul network in Asia and that will recover quicker than the American or European airlines will see."

The airline started daily direct flights to Hesthrow in April for the first time since introducing flights to Gatwick in the UK in 1980. But Cathay believes there is enough demand for two London routes and will keep up its daily flights to Gstwick.

Cathay recently concluded a long-term planning assessment for new aircraft and is soon to decide whether to convert an option on 14 A330s for delivery from 1996 and whether to replace some of its older 747s from 1998. But with uncertainty about the new airport project and the industry outlook, a decision is not expected this year.

In 1987 Cathay moved to underwrite its future by selling a 12.5 per cent stake to the Beijing-controlled China International Trust and Investment Corporation (CITIC). In January 1990, Cathay and its parent Swire Pacific again teamed np with CITIC to take control of Dragonair, a small regional carrier which had lost money since being founded in 1985. Cathay and its parent bought 35 per cent and manages the airline while a company controlled by CITIC bought 38.3 per cent.

The move signalled the end of a battle between Cathay and its new competitor for routes. Cathay transferred its profitable routes into Beijing and Shanghai to Dragonair which has now become a feeder airline into China from Cathay's hub in Hong Kong.

Hong Kong's third airline, Air Hong Kong, hegan operations in 1987. It is concentrating on cargo and has scheduled services to Manchester and Nagoya in Japan. Mr Stanley Ho, who has significant interests in tourism and gambling in Macau, took a 50 per cent stake in the carrier in 1989 through his Shun Tak Enterprises. Air Hong Kong hopes for more scheduled routes in Asia but is being opposed by Cathay.

Kai Tak handled 18.7m passengers last year, an increase of 15.4 per cent. A long-term improvement plan coating HK$2-3bn will increase capacity to 24m passengers. But further capacity increases are limited because of a night-time flight curfew to prevent aircraft noise in residential areas close to Kai Tak. Some carriers can no longer get their preferred slots during peak periods. Dragonair charter flights to China are not allowed to use Kai Tak during the afternoons because all available slots are being used by scheduled carriers. Hong Kong's Civil Aviation Department said Kai Tak will reach saturation in 1993 if aircraft movements increase at 10 per cent each year.

Two factors may relieve pressure at Kai Tak. Macau, a Portuguese enclave 40 miles down the coast from Hong Kong, is also building a single-runway international airport. China has a one-third stake in the US$3.5hn project which, although delayed, is due for completion in 1994. China is also building an airport for its domestic services at Huangtian in Shenzhen, just across the border from Hong Kong, which could open at the end of this year. Both airports could take up excess capacity from Hong Kong although neither is likely to be real competitors.

The second factor is Taiwanese travellers who, because there are no direct flights between Taiwan and China, travel via Hong Kong. Last year 3.61m passengers arrived from or departed for Taiwan, an increase of 18.4 per cent. China wants Taiwan to start direct flights. But even if Taiwan agrees it could take two years before services start.

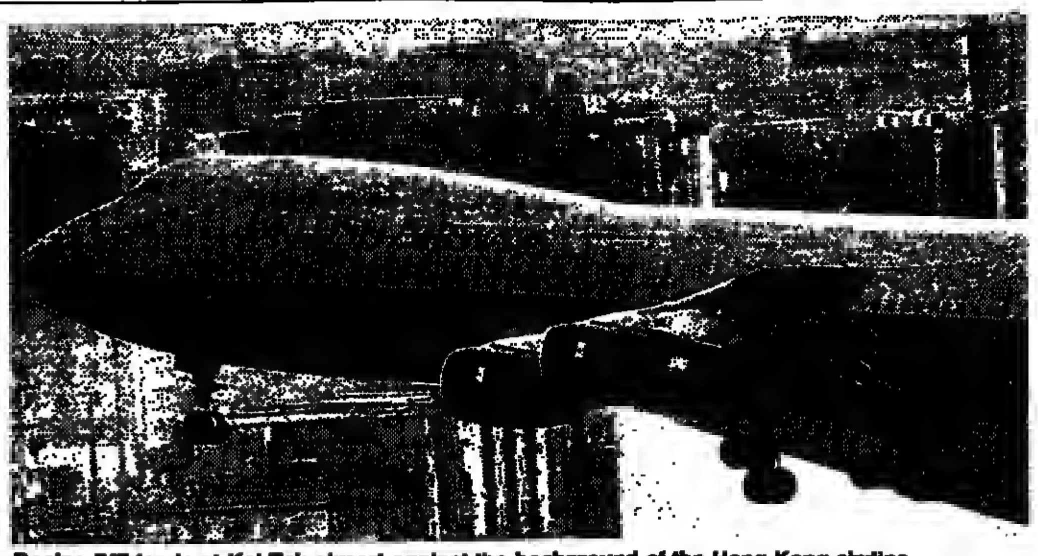
The shortage of space at Kai Tak is not only affecting airlines. Hong Kong Aircraft Engineering Company (HAECO), an aircraft maintenance company controlled by Cathay and Swire Pacific, is operating close to capacity. The company's four hangars are now operational nearly 24 hours a day. Plans for a fifth hangar were shelved when the government announced its new airport plan.

Cathay now provides more than 50 per cent of HAECO's revenues although the company also does maintenance for other carriers such as British Airways. Hong Kong's brain drain has badly affected HAECO, which in 1990 saw 120 of its 800 engineers head overseas, some poached by competitors offering foreign passports.

Under the terms of the 1984 Sino British Joint Declaration on the 1997 handover of Hong Kong, the colony was given the power to draft its own air service agreements to replace existing British arrangements. Hong Kong obtained the right because it is determined to keep its air traffic rights separate from China to retain autonomy and to protect Cathay.

So far only seven out of 24 air agreements between Hong Kong and third countries have been separated and signed and Hong Kong is concerned about slow progress made with China on this issue. Closer to 1997 negotiations will begin with the UK to conclude an agreement to take effect after the handover. Hong Kong is also negotiating with Vietnam to re-introduce direct flights, possible later this year.

Angus Foster



Boeing 747 lands at Kai Tak airport against the background of the Hong Kong skyline

AUSTRALIA

Changes on the domestic front

AVIATION has played a special role in the development of Australia since the formation of Queensland and Northern Territory Aerial Services, now known as Qantas, in 1920. It could hardly be otherwise in a country roughly the same size as the continental US, hut with a population of only 17m, scattered around a handful of cities separated by thousands of miles of semi-desert.

However, a strict regulatory regime minimised competition by limiting the domestic market to two airlines – government-owned Australian Airlines and Ansett Australia, owned jointly hy TNT, the international transport conglomerate, and News Corporation, Mr Rupert Murdoch's media group.

The result was a duopoly in which both domestic airlines offered similar services, flying similar airplanes from similar terminals at similar times. Price competition was minimal, and tickets costly by comparison with North America.

All that is in the process of changing following the deregulation of the domestic market from last October, and the announcement of plans to privatise 100 per cent of Australian Airlines and 49 per cent of Qantas, the government-owned international carrier, which is excluded from the domestic market.

The government sees deregulation as a way of revitalising the airlines' management, In line with a wider programme of structural reform intended to remove distortions in the economy. Privatisation will also reduce the government's exposnre to the airlines' requirements for new capital to finance expansion and fleet replacement.

However, there are concerns over the decision to go ahead with privatisation so soon after deregulation, and in the middle of Australia's worst recession since 1982/83, which has severely damaged airline efforts to recover from the after-effects of a year-long domestic pilots' strike.

The two domestic carriers are also having trouble coping with the advent of an independent competitor, Compass Airlines, which has succeeded in sparking off a fares war on principal routes.

As a result, Australian Airlines expects to do little better than break even at the operating level this year, following an operating loss of A$13m ($10m) last year, and Ansett is likely to make only a modest operating profit.

Qantas, hit by the Gulf War and recession in its main English-speaking markets, will make an operating loss of between A$350m and A$500m, alleviated by profits of up to A$400m from aircraft sales.

The privatisations will go ahead, but the unfavourable climate has forced the government to abandon plans to float hoth airlines this year in favour of a trade sale of 49 per cent of Australian towards the end of the year, probably followed by a flotation of the rest of the shares next year. The sale of Qantas will follow a similar pattern, but will probably not start until next year.

Potential purchasers will receive an information memorandum seeking hids for up to 25 per cent of either airline, subject to a total overseas shareholding of 40 per cent for Australian and 35 per cent for Qantas.

However, both airlines will require a significant injection of funds to strengthen their balance sheets before the sales can be concluded. Officials say Qantas has debts of more than A$3bn compared to equity of around A$1hn, and requires between A$600m and A$1bn to reduce its debt-to-equity ratio to more acceptable levels. Australian has dehts of A$1.3bn compared to net assets of around A$1.7bn, and is understood to have asked the government for A$300m.

In both cases, the injection will be achieved by reinvesting all or most of the proceeds of the initial trade sale.

Analysts say Australian is prohahly worth between A$750m and A$1bn, and Qantas between A$1hm and A$1.5bn, depending on the price overseas airlines are prepared to pay for access to the Australian market.

There is no shortage of interest in Australian, which has around 43 per cent of the domestic market, and is known to have had initial talks with overseas airlines.

Air New Zealand has been trying for several years to gain access to the Australian domestic market, and several other airlines are believed to be interested, including Singapore Airlines, Garuda Indonesia, Japan Air Lines, British Airways, and United Airlines of the US.

Mr Ted Harris, Australian's chairman, says he welcomes the government's decision to go ahead with the sales.

Qantas is in a mnch weaker position. It misjudged the growth of the tourist market after the boom during Australia's bicentenary in 1988, and geared up too rapidly to deal with growth which has not happened.

As a result, it will have to sack 3,000-5,000 of its 20,000 staff to get back into line with the productivity levels of competing airlines.

With the exception of the Qantas chairman, the airline's management is not highly regarded hy ministers, who believe it has failed to develop a credible long-term strategy.

Qantas further damaged its image last month when details emerged of a potentially costly series of secret agreements with Brierley Investments, American Airlines and Japan Air Lines hatched during the joint takeover of Air New Zealand in 1989.

Qantas says the deals were justified hecause they conferred partial control of an important competitor, and blocked a rival bid which would have allowed British Airways to huild a powerful South Pacific huh.

Nevertheless, the episode helps explain the government's decision to reject proposals put forward by Qantas to acquire up to 25 per cent of Australian to protect its access to domestic traffic.

The decision prompted an angry response from Mr Dix, who said the airline was being excluded from the domestic market at the same time as the government was encouraging overseas competitors to buy a stake in Australian bnt ministers are unimpressed.

Kevin Brown

JAPANESE AEROSPACE

Gap is slowly narrowing

THE once huge gap between Japanese aerospace companies and their US and European counterparts is slowly narrowing. In three areas – aircraft component manufacture, jet engine development and space – Japanese corporations are emerging as assertive and innovative competitors.

But in all threa fields, advances have been marred by setbacks, largely stemming from changing aerospace demands, political shifts and simple inexperience.

Japanese aerospace leaders outline three strategies by which they hope to correct imbalances. They are spending more on research and development than their competitors. They are collaborating with other Japanese and foreign companies and with the ministry of international trade and industry. They are also trying to increase the percentage of aerospace-related sales to the booming commercial sector, acknowledging that the new global political order will likely reduce demand for such aircraft as F15 fighters and P3C anti-submarine patrol aircraft.

In fiscal 1989, according to the Society of Japanese Aerospace Companies, the value of aerospace production almost hit Y1,000hn ($7bn) for the first time. But that is less than 5 per cent of US production, and aerospace sales are barely half those of the UK and far below France and Germany.

Further, production of aircraft and engines this year has been dropping, largely due to reduced demand from the Defense Agency, which accounts for some 75 per cent of industry sales.

The long-term goal, says a Tokyo analyst, is to move from mannfacture of components, to snb-systems and then to complete aerospace systems.

For the 1990s, global co-development is the preferred, although often controversial, route for gaining a foothold in the market.

Japan's Mitsubishi Heavy Industries and the US's General Dynamics Corp are co-designing a support jet fighter, the FSX. But that project drew fire from US and Tokyo politicians in 1989 and 1990 with both sides concerned about technology transfer that would give one nation a competitive edge. Escalating developing costs suggest the plane will not fly until the 21st century.

Three Japanese companies – Mitsubishi Heavy, Fuji Heavy Induatries Ltd and Kawasaki Heavy Industries Ltd – are also collaborating with Boeing on development of a new wide-hodied, twin-engine passenger jet, the 777.

But the Japanese companies' plans to become full equity partners in the project were thwarted last year. The companies will now develop and produce some 20 per cent of the aircraft's parts, a sub-contractor status similar to the firms' work on Boeing's 767-300 jet.

Frustrated by Boeing, the companies are now eyeing work in Europe. British Aerospace, which opened a Tokyo office last July, recently gave an order to Kawasaki Heavy to manufacture the fuselage for the A321 Airbus.

And the Mitsuhishi group and Daimler-Benz AG of West Germany last year agreed to conduct joint aerospace research. Mitsnbishi Heavy, which huilt Japan's renowned Second World War plane, the Zero, will initially focus on R&D of heat-resistant materials and aerodynamics.

A couple of Japan-US helicopter ventures are also in the works. Mitsui is working with Bell Helicopter Textron of Texas to develop and prodnce a 10-seat helicopter, and International R&D of Tokyo recently bought a stake in Michigan's Enstrom Helicopter Corp.

International collaboration is also crucial to Japanese aeroapace engine development efforts.

For example, the three Japanese engine makers – Ishikawajima-Harima Heavy Industries, Mitsuhishi Heavy and Kawasaki Heavy – are working under the name Japanese Aero Engines Corp, as part of an international consortium building V2500 turbofsn engines. The engines are installed in Airbus industries' 150-seat A320 and 180-seat A321 planes and will be used in McDonnell Douglas's MD90 passenger plane.

A more ambitious plan is development hy the three makers and four non-Japanese companiea of a prototype engine that will fly at Mach 5, about 6,400km an hour. The goal is to huild a supersonic passenger plane that can fly from New York to Tokyo in about five hours, compared to 14 hours at present.

Foreign companies involved in the project, which has some financial backing from MITI, are Pratt & Whitney, General Electric, Rolls-Royce and France'a Snecma.

Meanwhile, the National Aerospace Lahoratory is looking to the 21st century when it hopes to launch a horizontal take-off and landing (Hotol) spaceplane that would combine the functions of an aircraft, space transporter and orbital spaceship.

Two of the indnstry's strengths are in building solar cell panels and in developing composite materials. But space product manufacturers and Japan's space administrators, the National Space Development Agency of Japan (NASDA) and the Institute of Space and Astronautical Scleoce (ISAS), lack the expertise and hudgets of US space firms and of the National Aeronantics and Space Administration.

Assembly of the H-1 rocket at Mitsubishi in Nagoya

In spite of this, the industry has made halting progress. Last year, ISAS launched a probe into orbit around the moon. Also last year, Mitsubishi Heavy, Kawasaki Heavy and 73 other Japanese companies set up a consortium called Rocket System to enter the commercial rocket-launching business.

If all these space, engine and materials' projects attain their potential, Japan's 21st century aerospace potential appears awesome indeed. But history suggests that the sum of these parts may be less than tha whole.

Paul Addison

CHINA

Bitter internal debate

13

THE FUTURE of China's aviation industry revolves around a hitter internal debate in Beijing over how to build the next generation of passenger aircraft. That debate centres on whether the Chinese should award a multi-billion dollar contract to Boeing or McDonnell Douglas to develop what has become known as China's trunkliner programme.

However, in spite of years of lohbying and intense political manoenvering, the Chinese government remains deadlocked over how to proceed.

"The trunkliner aircraft programme has been bogged down," said a western source. "There has been no clear decision. The Chinese authorities are looking for a compromise."

The debate over the trunkliner programme has been going on since the mid-80s. Whoever emerges as the victor will wield significant influence over China's aircraft industry.

The ministry of aerospace industry is backing McDonnell Douglas, which since 1985 has heen prodncing MD82s in Shanghai, while China's airline, the civil aviation administration of China (CAAC) still strongly favours Boeing.

Under the terms of the proposed deal, which is worth between $5bn to $10bn, China would jointly develop 150 aircraft with either Boeing or Mcdonnell Douglas. CAAC would then buy the planes for use on its own domestic routes beginning in 1996.

It is difficult to predict which company will be the ultimate winner. Until recent months, Boeing, was believed to have the edge. But now McDonnell Douglas appears to have regained the initiative.

One important sign was that the China aerotechnnlogy import and export corporation (CATIC), a trading arm of the ministry of aerospace empowered to negotiate for the ministry, this spring awarded a $2m contract to McDonnell Douglas. Under its terms, the Chinese would pay for the funding of the development of the landing undercarriage of the MD90, the variation of the MD82 that would be produced if McDonnell Douglas wins the trunkliner contract.

Apart from this contract, McDonnell Douglas appears to have acquired an advocate in leadership circles with the recent appointment of Jiang Zhuping to be CAAC's director-general. He replaces Hu Yizhon who has retired, but will remain as an adviser to the airline. Hu had a reputation as being more of a Boeing supporter, while Jiang was a party secretary in the ministry of aeronautics industry.

With ministry of aerospace approval, McDonnell Douglas operates a co-prodnction arrangement with the Shanghai Aircraft Industrial Corp. It has delivered 22 out of 25 MD82 passenger planes with 10 additional firm orders and options for 10 more.

Under the terms of its proposal, McDonnell Donglas would expand its operation in Shanghai, putting more capital in to become a partner in the project.

In spite of this latest shift towards McDonnell Douglas, the Chinese have not closed the door on Boeing.

If the trunkliner programme continnes in its present form, China has stipulated that whoever is the winner will be required to source 51 per cent of the value of the aircraft in China and must buy back certain components for export. This includes engineer manufacturers. For Boeing, thia would apply to General Electric of the US. If McDonnell Douglas is selected, the International Aero Engines consortium, which inclndes Rolls-Royce and Pratt & Whitney, would do the work.

It is unclear when China will make a decision about the trunkliner programme. There is a possibility the Chinese could decide after negotiating for six more months, or simply let the entire process drag on indefinitely, while CAAC buys the aircraft it really wants, western sources said.

Lynne Curry

JAPANESE AIRLINES

The future is looking up

ON JULY 1, a DC-10 charter jet with 300 passengers aboard is scheduled to lift off from Fukuoka airport on the island of Kyushu, en route to Honolulu.

That flight, the maiden voyage of Japan Air Charter, a new Japan Airlines' (JAL) subsidiary, will say a good deal about what is working for and against international air travel in Japan.

For one thing, overseas air travel is growing so rapidly that even the once inert charter market is attracting the attention of Japan's leading carriers.

For another, the main airports in Tokyo and Osaka are so congested that the airlines are increasingly retreating to regional airports to operate international flights.

And to top it off, there is a pilot shortage, as well as a labour shortage in Japan, so the DC-10's cockpit crew will be American, and its stewardesses will be Thai.

In spite of these mixed signals, and the bruising downturn in air travel caused hy the Gulf war, the future is clearly looking up for international air travel in Japan, and for the country's three main carriers: JAL, All Nippon Airways (ANA) and Japan Air Systems. Indeed, the lack of airport capacity may be the only thing preventing the air travel boom from turning into an explosion.

Last year, 10,997,431 Japanese ventured abroad, topping 1989's record by 13.8 per cent and fulfilling the government's "10 Million Plan" two years ahead of schedule. The betting is that the total will double again by 2000.

The domestic market, which often feeds international traffic, is so vihrant that the world's three busiest rontes are in Japan – Tokyo-Sapporo, Tokyo-Fukuoka, Tokyo-Osaka.

What is more, a record 3.5m foreigners entered the country last year, a 17.4 per cent increase over 1989.

The main reasons for the overseas travel binge are the yen's strength since 1985, Japan's near-record economic expansion, and a sea change here in the attitude toward leisure time.

And Japan's air travel business, the world's third biggest, behind the US and USSR, still has plenty of room to grow. "The experience and maturity of the market here is like the US market of 15 years ago," says Geoffrey Tudor, a spokesman for JAL, the nation's largest carrier.

"We expect 20m travellers by the year 2000," Mr Tudor adds. "Despite the recent hiccup, there doesn't seem to be any doubt that will happen." That "hiccup", of course, was the war in the Middle East. The government, chagrined by criticism that it was not doing enough to support the allies, discouraged overseas holiday travel while the war was raging. Many Japanese, fearing terrorism, were happy to oblige.

Thus, after posting record passenger levels from April through September, JAL reported passenger levels down 3.5 per cent for the year, to about 7.9m. That was the first such drop in 14 years, according to JAL, which still bolds a dominant 26 per cent share of Japan's international air travel market five years after deregulation deprived it of its overseas flight monopoly.

ANA, which claims about 4 per cent of the international market, says its overall passenger totals were up 17 per cent from a year ago. The airline, whose main business is domestic travel, had been predicting a 30 per cent rise.

Now, the airlines are banking that the worst is behind them, and they are looking to cash in on the new routes each has been awarded this year.

On March 30, JAL inaugurated direct service between Tokyo and Washington, one of 48 American cities to which it operates.

On March 9, ANA launched a direct service to New York, the 18th overseas destination for the airline since 1986, when it was given permission to challenge JAL in the international arena.

And Japan Air Systems, which has only two international routes, to Seoul and Singapore, and carried 110,000 passengers overseas last fiscal year, is starting up a route to Honolulu.

Yet those are likely to be the last additional routes the airlines will be granted until construction projects are complated, perhaps by 1995, at Japan's three major international airports: Narita and Haneda in Tokyo, and New Kansai International in Osaka.

Narita, which handles 66.5 per cent of Japan's overseas traffic, is still, incredihly, restricted to just one runway, in spite of 25 years of government effort to get local farmers to sell their land.

Japan Travel Bureau, the nation's leading travel agency, estimates that because of the airport crunch, 1.5m people were forced in 1989 to forgo air travel.

In fact, Narita's inconvenient access, limited capacity and customs-clearance procedures are so bad that officials here warn that international cargo and passengers will gradually shift to other Asian points of entry.

"We have 70 flights a week from Narita; if we want to add one flight, we have no choice hut to take one away," says ANA spokeaman Tetauo Fukuda.

ANA has been striving to expand its international operations. Largely in response to airport constraints, hoth ANA and JAL have started co-operative ventures with foreign carriers. Thus, ANA now has access to airports in Kuala Lumpur, Brussels, Stockholm and Vienna, since all the services use the foreign carriers' aircraft.

And ANA, like the other airlines, is moving to regional airports and has started up its own charter service.

Otber trends include more market segmentation and a growth in individual travel, according to an airline official.

In addition, business travel, a lucrative sector, is becoming more sophisticated and demanding. It will require better pre-flight, in-flight and post-flight service.

Recent examples: JAL is starting up a satellite-aided, commercial telephone service on one of its transpacific routes, enahling passengers to call Japan. And for its new Tokyo-Washington route, the airline converted the liquor counter in the first-class lounge to a sushi bar.

Mark McQuillan

FRANCE

Abrupt end to smooth flight

THE smooth flight of France's aerospace companies has run into turbulence over the past year, in common with practically all their international competitors.

The downturn has hit faster in France than on previous occasions and catches the French industry at a sensitive moment; in the middle of diversification from a stagnant military market, hit by the political changes in eastern Europe and a civil market that has swung sharply from expansion into profound depression.

All France's main players are feeling the pinch. On the civil side, loss-making Air France has responded to the collapse in air traffic caused by the recession and the Gulf war by delaying some deliveries of jets from Airbus Industrie, the European aircraft consortium in which Aérospatiale, the French state-owned aircraft maker, has a 37.9 per cent stake.

Mr Jean Pierson, Airbus's managing director, is predicting that the consortium will win only 170 orders from all customers this year, less than half the 404 orders won in 1990.

On the defence side, budget constraints have at last forced France to rethink its traditional reluctance to curb military spending.

France's defence budget will rise by just 2.7 per cent in 1991, the first time for years it has failed to keep track with inflation.

Against this disturbed background, it is no surprise that Aérospatiale, Dassault Aviation, the producer of fighters and business jets and Snecma, the state-owned engine producer, have all seen profits fall last year, an abrupt end to years of growth led by the expansion in civil aircraft sales.

Aérospatiale was hardest hit, net earnings plunging from FFr204m ($35m) to FFr38m. Dassault Aviation saw net profits fall by 26 per cent to FFr218m. Snecma managed to limit the damage to a 9.4 per cent fall in net profits to FFr77m, hit by losses at its new Belgian subsidiary, FN Moteurs.

The French aerospace industry booked FFr132.4bn of orders in 1990, nearly 10 per cent down on the previous year and a sharp turnround from the 22 per cent rise in 1989.

It is bracing itself for an even steeper 24 per cent decline to FFr100bn this year, according to Mr Bernard Nicolas, managing director of Gifas, the aerospace industry association.

Added to this, the dollar's fall has caused currency losses on exports to the US, though Gifas says there is no evidence that French suppliers are yet losing market share in the US.

The rate of actual deliveries, of course, is relatively slow to respond to the recession since aircraft completed today were ordered roughly two years previously, when the air transport market was in full expansion. Yet already, the French aerospace industry's deliveries have started to see a significant slowdown.

Last year's French sales rose by nearly 6 per cent to FFr110.8bn, within which civil deliveries rose by 9 per cent and defence deliveries by 3 per cent. That compares with the 12 per cent overall sales growth rate in 1989.

But even at last year's sluggish pace, the industry produced a FFr36bn trade surplus, holding its position as France's biggest exporter at a time when the trade balance stubbornly continues to show a deficit.

Defence deliveries accounted for a small majority of last year's industry sales, 52 per cent of the total, but still significantly less than five years ago.

Civil business accounts for just over 61 per cent of the order book, suggesting that the trend towards commercial orders will continue, even through the recession.

In spite of the uncertainties of the market, the French aerospace industry is continuing to develop new products and international partnerships.

Aérospatiale and MBB, the German aerospace group, are merging their helicopter divisions to form a group with combined sales of FFr10bn. This will be the world's second largest helicopter maker after Sikorsky of the US, from whom they aim to take market share.

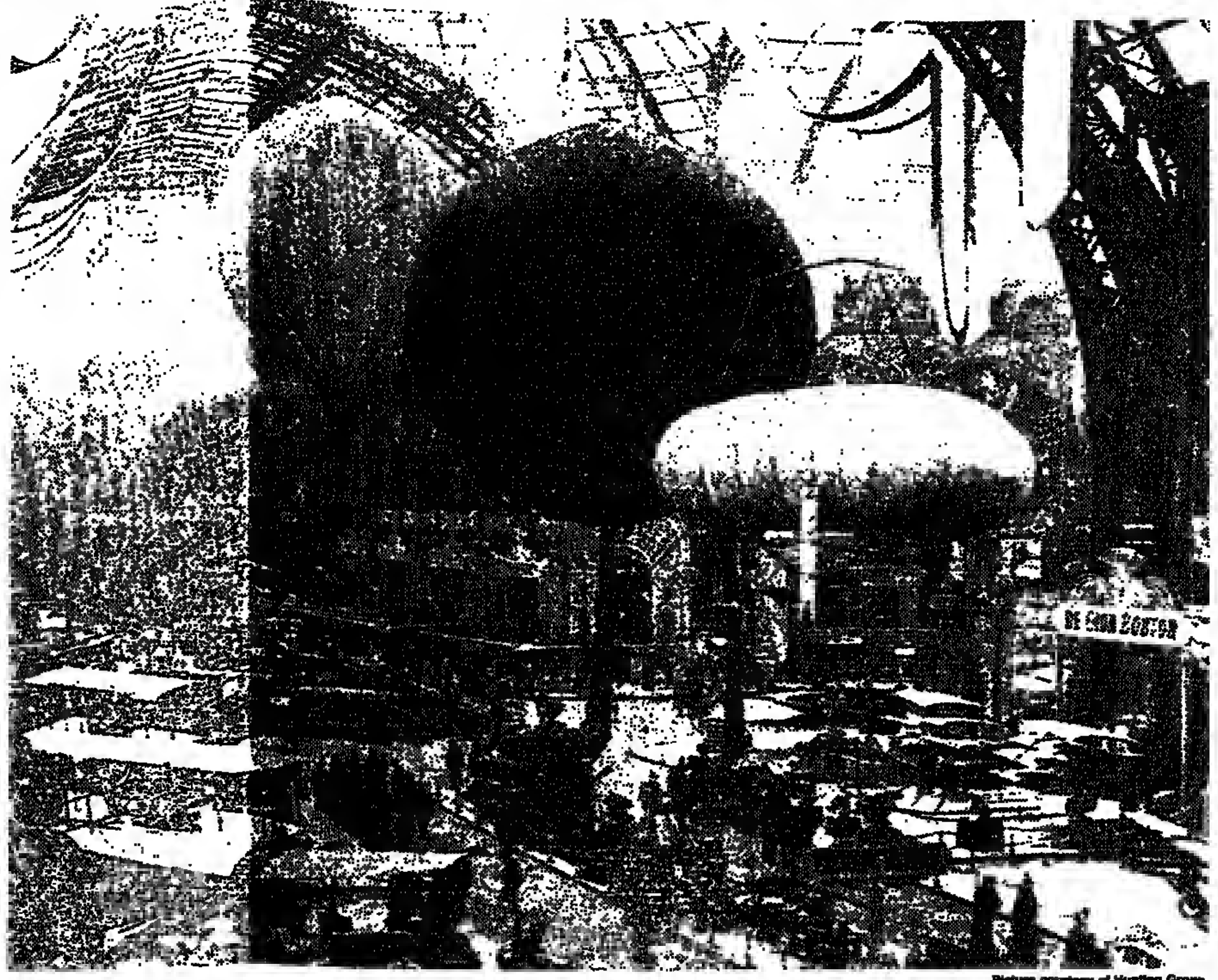
The French aerospace company has signed an accord with Deutsche Aerospace and Alenia of Italy to develop a new family of 80-130 seater regional jets and has teamed up with Alenia to buy De Havilland, the Canadian commuter aircraft producer. Both deals are an example of the European aerospace groups' eagerness to develop products beyond those included in the Airbus range, which does not cover aircraft with fewer than 150 seats.

Snecma, meanwhile, has been enlarging its two decades of joint civil engine production with General Electric of the US, by taking a 20 per cent stake in heavy-thrust GE engines for the emerging market for the new generation of wide-bodied commercial aircraft.

Dassault Aviation, which has not had a military export order for three years, wants to expand its business jet activities and is seeking limited co-operation with other aerospace groups such as Alenia, which has a 25 per cent stake in the new Falcon 2000 business jet.

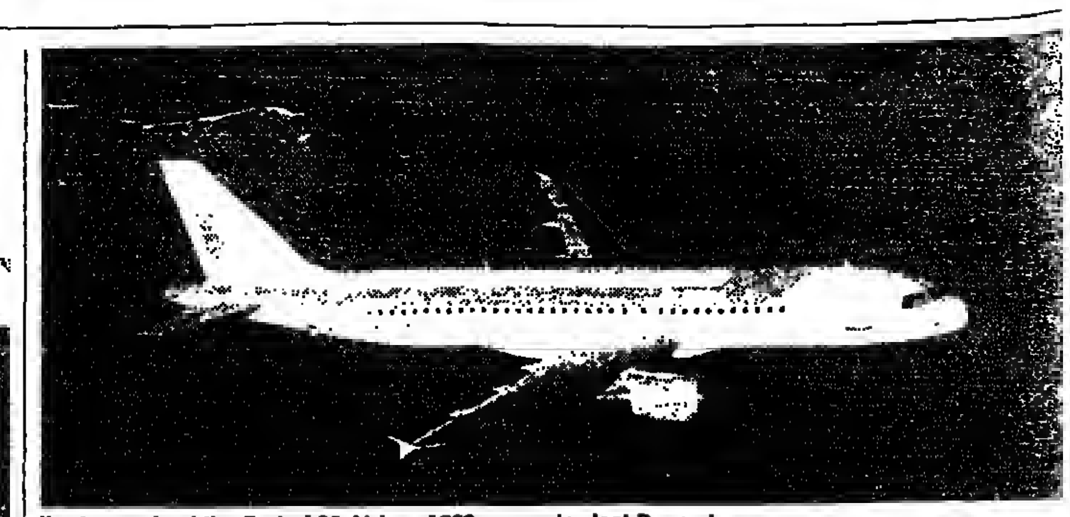
The company's future rests on the Rafale, which is undergoing development flights and is due to enter service with the French air force and navy from the end of 1996.

William Dawkins



Picture courtesy of Hunting Group

Focus on yesterday: the Paris Air Salon in 1909, the year in which Louis Blériot made the first flight across the Channel



Iberia received the first of 22 Airbus A320s on order last December

SPAIN

In search of partners for new projects

MR JAVIER ALVAREZ VARA, the youthful aeronautical engineer who presides over Spain's state-owned aerospace business, makes a specific point about Construcciones Aeronauticas SA (CASA), the company that he has been running for the past four years: "Look at our operational results, not at our financial results."

If his advice is heeded, CASA comes across as a competitive small-to-medium aerospace company that has earned a niche in the industry. It has used its home-grown technology to create marketable products and to enter into a series of European alliances in the civilian and the military fields.

If the financial results are examined, the future for Spain's aerospace company looks far from buoyant for it is undercapitalised and loses money consistently.

Mr Alvarez Vara believes CASA will have losses of Pta4.5bn ($42m) when it presents its consolidated 1990 results next month, a marginal improvement on the 1989 loss of Pta4.6bn. He does not expect any improvement this year and he frets about the Pta15bn costs of servicing CASA's Pta120bn debts.

These financial results are a painful paradox for a company that has sold its aeroplanes worldwide and is a partner in the Airbus and the European Fighter Aircraft (EFA) programmes.

The operational results suggest CASA is in excellent shape. Income last year rose from Pta87bn to Pta102.8bn, in spite of a Pta96:$1 exchange rate that represented a punitive burden for the company which earns 70 per cent of its revenue in the undervalued US currency and spends its fixed costs in overvalued pesetas. Last year's income was a company record and it indicated that CASA has tripled its sales in four years for in 1986, with a dollar exchange rate of Pta135, income was Pta43bn.

Part of Mr Alvarez Vara's chagrin is that he has achieved excellent operating results by trimming CASA's labour force from 10,700 to 9,500.

Productivity has never been higher in the Spanish company nor has its business environment looked more promising.

In August, CASA will pass a significant milestone in its quest for a sustained high income when it delivers the first wings of a new 50-seat regional airliner being developed by Saab and which is due to roll out in November. The delivery follows a breakthrough 1989 Pta60bn contract with the Swedish aerospace company that brought CASA into the manufacturing process of the Saab 2000.

When Sweden's regional airliner enters full production in 1993, CASA's supply of wings to the Saab 2000 should represent as much as 6 per cent of the company's total revenue. But the more revealing result of the co-operation agreement is that it has prompted the Spanish company to study the possibilities of building an advanced turbo-prop plane for 70 passengers.

Mr Alvarez Vara believes the philosophy that has guided the development of the Saab 2000 could be applied to a larger aircraft for which there is a market niche.

The progress of tha Saab 2000 venture has delighted CASA executives but they are uneasy that the bottom line of such revenue-earning agreements is that the company merely supplies parts of an aircraft to a larger aerospace group.

This is why Mr Alvarez Vara, whose maxim is that CASA's business is to build aircraft, has taken the venture one stage further.

The company is still motivated by its primary vocation of developing aircraft and its greatest pride is its versatile CN-235 turbo-prop which can transport 44 passengers or five tonnes of cargo.

The company has done well with the CN-235, having sold 178 units, 50 of which will be assembled in Turkey. The aircraft has proved a worthy successor to the C-212 Aviocar, a sturdy, short take-off and landing plane that is used worldwide by 47 operators, and these two aircraft, together with a fighter-trainer designed for the Spanish airforce, go some way towards meeting CASA's ambitions as an aircraft producer.

The 70-seat advanced turbo prop being studied requires co-operation agreements that would be far more meaningful than the one with Saab. A key component of the study is the identification of potential partners for the venture because Mr Alvarez Vara concedes "we could not develop such a prototype on our own for we simply do not have the resources".

Such a venture is viewed at CASA almost as an insurance policy should its worst fears on the future of the EFA programme be realised. The company is contributing the rear fuselage to the projected European fighter and, much in the manner of the other aerospace firms involved in the consortium, it is anxiously awaiting the final go-ahead by European governments.

Mr Alvarez Vara, who views the Germans as the "weak link" in the project, says the EFA programme is "vital" to the Spanish company.

Fortunately, CASA can fall back on the Airbus programme, which accounts for 20 per cent of income. It would like to apply the lessons learned in the Airbus alliance to potential partnerships developing a 70-seat regional airliner.

The reasoning is that if CASA can play a relevant role in consortiums to develop sophisticated combat planes and big carriers such as those of the Airbus series, it should be able to evolve similar agreements to build regional passenger aircraft.

However, Mr Alvarez Vara acknowledges that CASA cannot go it alone. "We can only survive through alliances and we must be interdependent because we cannot be independent."

Before cementing such alliances the company's financial situation must first be settled. The most pressing problem is not so much that CASA is losing money but that its owner, the public sector holding company Instituto Nacional de Industria (INI), is haemorrhaging even more.

INI's losses last year, with further losses forecast this year, do not suggest that new funds will be forthcoming. What is required is an increase in share capital which would reduce the state's 90 per cent holding and bring in private Spanish investors and a foreign aerospace group.

Mr Alvarez Vara's ambitions to remain in the aircraft building business depend on an injection of new funds to help CASA pay off its debts and undertake new ventures.

Tom Burns

ITALY

Alenia's disappointing debut

DISAPPOINTMENT arose at the dividend declared at the end of April by Italy's state-controlled aerospace corporation Alenia.

The company, created in December last year from the merger of the Aeritalia and Selenia subsidiaries of the IRI state holding corporation, announced that its ordinary shares would earn L90, a fall of nearly 50 per cent on the dividend paid by Aeritalia for its 1989 financial year.

With its accounts recording a decline in profits from L56bn ($44m) on L2,564bn sales in 1989 to only L30bn on L3,703bn sales, Alenia's first year had not been easy.

In getting to grips with changing conditions and stiff competition, Alenia has given some signs of the path that it will follow. But it is considered surprising that, in the year since the decision to merge Aeritalia with Selenia, the corporation has not yet started a thorough rationalisation.

On the contrary, Alenia increased its payroll in its first year by more than 400 to nearly 22,000, the group closing 1990 with just over 30,000 employees.

Nevertheless, notwithstanding disappointment over the dividend and the apparent absence of progress in rationalisation, the new corporation is an important step forward for Italian aerospace. It has brought together the resources of two large corporations operating in similar or related technologies and markets, and offers scope for substantial efficiency improvements.

What has been done, therefore, in transforming potential into reality? In unstitching and restitching the corporate pieces of its Aeritalia and Selenia components, Alenia has created four divisions:

- Alenia Aeronautica: design, construction and maintenance of civil and military aircraft and aero engines. This accounts for 53 per cent of business.
- Alenia Sistemi Difesa: design and manufacture of air defence, command/control/communication, missile and avionics systems (27 per cent of business).
- Alenia Spazio: design and construction of space systems (10 per cent of business).
- Alenia Sistemi Civili: design and manufacture of air/maritime traffic control and communication systems (10 per cent of business).

Management faces its biggest problems in the military field, the most taxing concerning three large aircraft construction projects. Though military work has allowed the Italian aerospace industry, and Alenia's Aeritalia predecessor in particular, to close the technological gap separating Italy from other western countries, demands for the "peace dividend" are putting programmes under pressure.

Funding difficulties will probably prevent the Italian Air Force from procuring the full number of Tornado aircraft foreseen when Aeritalia became a founding partner in a project of fundamental importance to the development of Italian aerospace. Few believe Italy will buy all five batches of the AMX light attack aircraft developed in partnership with Brazil. Fewer than 140 out of 238 sought by the Air Force are likely to enter service.

Much depends on the European Fighter Aircraft, for which Alenia is Italy's representative. With its ancient F104 fighters the Italian Air Force urgently needs EFA. However, even if the project receives the go-ahead, it seems unlikely that Italy will take up its agreed, initial quota of 165. It is widely thought that no more than 110 will be bought.

While there are serious problems for the aircraft division, the future for Alenia's defence systems looks even more clouded. Notwithstanding the success of the Aspide/Spada systems, and the stimulus of the Gulf war, detente in Europe means less interest in these and in Alenia's other missile projects. It is thought that the corporation has yet to sell its Skyshark weapon system.

Matters look brighter for civil projects, particularly air traffic control systems, for which Alenia's Selenia predecessor had an international reputation and order portfolio. Alenia's civil aircraft work is also buoyant.

However, Alenia probably considers its most successful civil venture to be its transalpine partnership with Aérospatiale on the ATR regional airliner in its 42- and 72-seat versions. Recent developments have underlined the strategic importance of the link with Toulouse.

With its French partner and Germany's Dasa, Alenia is engaged in a project for a 100-130 seat regional jet aircraft. This will compete with British (BAe 146 derivative), Dutch (stretched Fokker 100) and European rivals (a smaller A320 from the Airbus consortium), the latter being a venture in which Italy has only a marginal sub-contracting involvement.

Prospects are clearly brighter for Alenia's civil business than in military work. The same is true for Agusta, the helicopter maker that belongs to Italy's EFIM state holding corporation. Its biggest project, the EH101 collaborative venture with Britain's Westland, suffers considerable uncertainty. The fourth memorandum of understanding between the Italian and British governments, giving authority for spending on production preparations, should have been signed. But delays in a British decision on an integrated mission system, coupled to Italian budgetary constraints, means that the MOU will not be signed before July.

Agusta hopes the fifth MOU will be signed before the end of this year, which will allow start of production. And the go-ahead from the Italian and British governments will trigger an order from the Canadian Navy.

Although conceived as e naval helicopter, the EH101 is widely seen as a winner in the civil sector. The three-engined, all-weather helicopter will be able to carry 6,000kg at a cruising speed of 150 knots. Its range with 30 passengers will be nearly 500 miles.

Yet the EH101's civil potential cannot be realised until production of the naval version starts.

David Lane

USSR

Reform still bogged down

THERE are few areas of the Soviet economy which better illustrate the yawning gap between Soviet talk of reform and reality than the country's airline industry.

Aeroflot, the national carrier, last year announced plans for sweeping market reforms which would break its monopoly on air transport and improve its services. One year on, reform has yet to get off the ground, and the airline – still synonymous with the Civil Aviation Ministry in spite of plans for divorce – continues to turn away an annual average of 20m passengers.

Plagued by a shortage of aircraft, Aeroflot is still waiting for the delivery of new Soviet civilian airliners, the long-haul Ilyushin-96-300 and the Il-114 for regional flights. Originally promised for last year, these planes have so far failed to emerge from the bowels of the Aviation Industry Ministry, the state body which runs civilian manufacturers such as Ilyushin and Tupolev. In the meantime, Aeroflot has ordered five Airbuses, due for delivery in November, but these are only a drop in the ocean compared to what its needs.

Talk of converting part of the Soviet defence industry, including military aviation, to civilian uses is still only talk. The manufacturers of world-famous MiG and Sukhoi air force jets have been pursuing talks on co-operation with western manufacturers to build civilian planes, but without any tangible results.

So what are the reasons for this list of failures? The prime cause is a lack of political will for radical economic reform, although this may change as President Gorbachev seeks to attract western aid in return for genuine market reforms.

Twinned with the failure to reform is an absence of favourable conditions for foreign investment.

In spite of this, some foreign airlines are already coming in with capital, in anticipation of future opportunities in the Soviet market.

Lufthansa has set up a joint venture with Aeroflot to modernise the main Moscow airport of Sheremetievo, while British Airways is involved in a similar project at the domestic terminal of Domodedovo.

But such investors are likely to remain pioneers as long as the state bureancracy continues to control the industry, as long as the rouble is not convertible and as long as protection of foreign investment remains inadequate.

The only reform to take effect so far has been an increase in fares under the government's April 2 reform of most state retail prices. But while Soviet customers with hard currency can obtain tickets for international flights, those with roubles often have to wait for months to get bookings to fly out of the country.

Inertia at the top has not meant a lack of effort at grassroots level. But there are limitations to what entrepreneurs can achieve without support from the government for energetic demonopolisation and foreign investment.

"Change at Aeroflot has simply been a change of nameplates," complains Mr Alfred Malinovsky, head of the Soviet pilots' union. He is one of a group of pilots, former civil aviation ministry officials, and private entrepreneurs who are trying to set up a long-haul airline called ASDA, to compete with Aeroflot.

But in spite of exploratory talks on the possible purchase of Boeing-747s, ASDA has yet to find the finance it needs to begin operations.

Left to its own devices, the Civil Aviation Ministry has turned some of Aeroflot's regional divisions into "concerns" – pseudo-corporations which are supposed to become independent. The Azerbaijani offshoot of Aeroflot was renamed Azerbaijani Airlines in December, while the Lithuanian branch of Aeroflot has been called Lithuanian Airlines for three years now.

But all of these remain dependent on the central ministry (ie Aeroflot) for aircraft and infrastructure – since there are no plans to redistribute Aeroflot's assets to the daughter airlines which are supposed to compete with it.

Aeroflot says that these daughter enterprises must buy the planes from it; hardly a way of encouraging competition. The government has promised for months to set up an independent anti-monopoly commission to handle demonopolisation. Until it does, however, the world's largest carrier is unlikely to make much headway in breaking up its own monopoly.

Similar inertia affects the country's manufacturers of civilian aircraft, who for decades have suffered from a lack of competition (Aeroflot would take anything it got from them) and relatively little investment compared to the privileged defence sector.

In another sign of the backwardness of Soviet manufacturers, Aeroflot is now negotiating with General Electric and Pratt-Whitney to re-engine its Il-86s in order to cut their fuel consumption and pollution levels.

Under the government's efforts to switch the emphasis of Soviet industry from civilian to military output, MiG and Sukhoi are trying to move into the production of civilian aircraft.

In 1989, Sukhoi and Gulfstream of the US announced plans to co-operate on the construction of a supersonic business plane, although this has yet to materialise. Mr Anatoly Belosvet, deputy chief of the Mikoyan design bureau, which manages the production of MiG combat planes, says he expects to conclude civilian contracts with western companies at the Paris air show. But he gives few details, saying MiG is looking into the development of a supersonic business plane, as well as to make trainer aircraft, to replace Czechoslovak L-410s and L-610s. The latter were supplied to the Soviet Union by Czechoslovakia until January, when it demanded foreign currency in keeping with a switch by Comecon countries to hard currency trading.

Mr Belosvet claims that only defence plants can attract western investment to build world-class airliners. He says this is not only because of their technological prowess – for instance in aerodynamics, but also because they are accustomed to competition – of sorts.

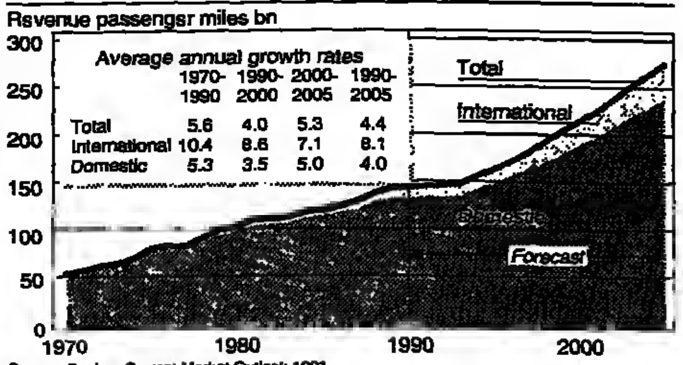
"All these years the military aviation industry worked in tough competition with the west," says Mr Belosvet. "We had no right to create inferior bombers and fighter planes. We were already competing with General Dynamics and McDonnell-Douglas."

Mr Belosvet also reveals that Paris will see the first display in the west of his latest fighter plane, the MiG-31, which has never been exported but may be in future.

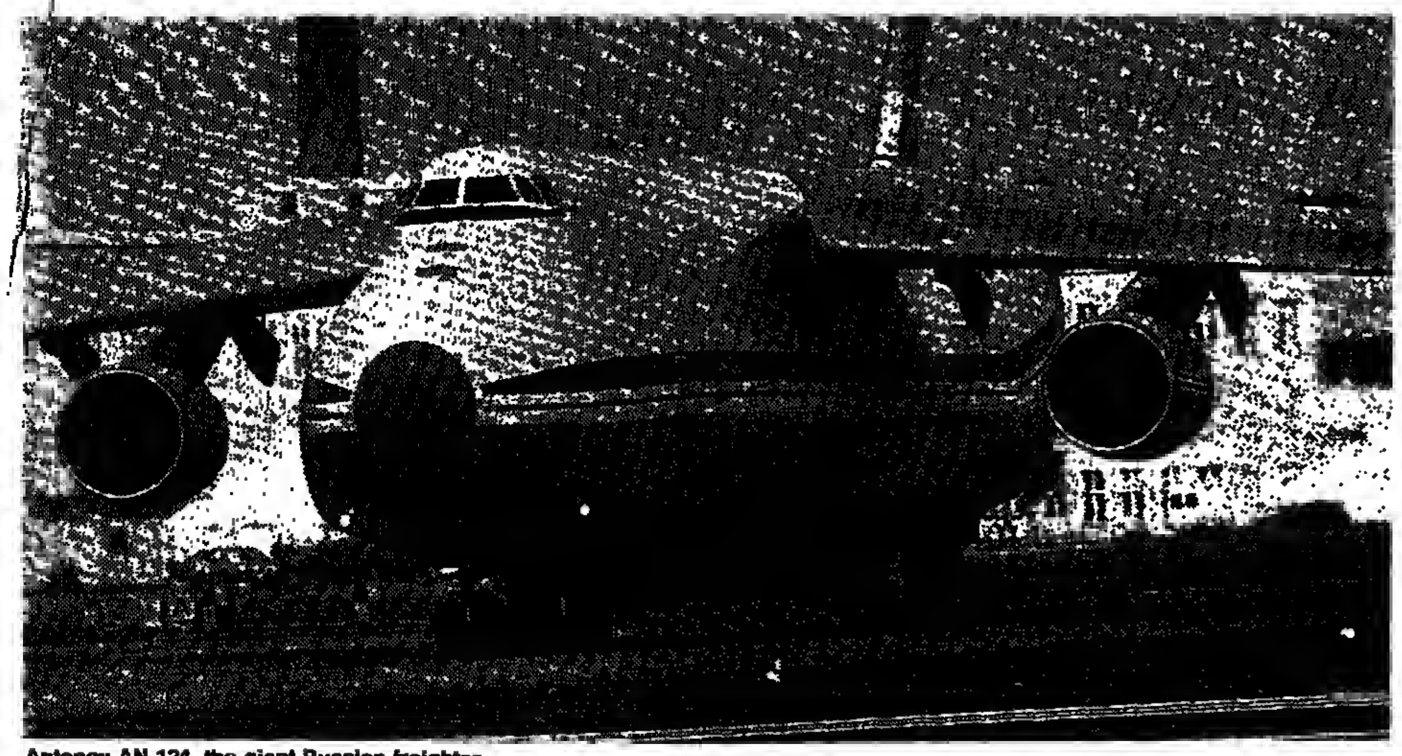
Leyla Boulton

USSR airline traffic

Revenue passenger miles bn



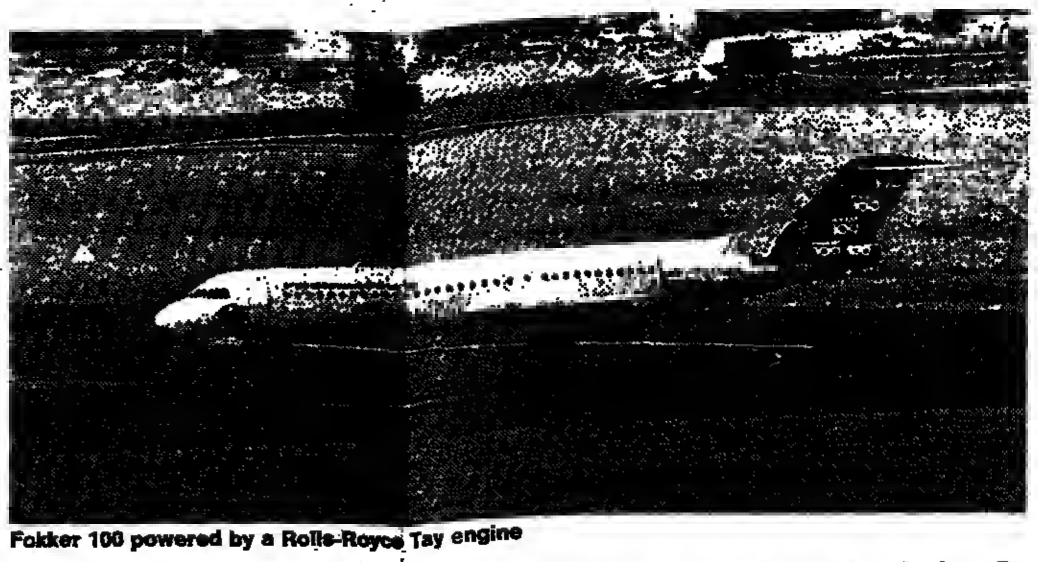
Source: Boeing, Current Market Outlook 1991



Antonov AN-124, the giant Russian freighter

THE NETHERLANDS

Fokker seeks foreign pact



Fokker 100 powered by a Rolls-Royce Tay engine

FOKKER, the Dutch aeroplane builder, is stepping up its efforts to form a partnership with one or more foreign competitors as it prepares to develop a new 130-seat aircraft.

The company is looking for what it calls a "full swing partner" to share development costs on new projects and to complement Fokker's existing family of aircraft, the 50-seat turboprop Fokker 50 and the 100-seat twinjet Fokker 100.

Fokker, one of only five civilian aircraft makers in the western industrialised world, is well aware that several other aerospace groups are also planning to launch 130-seat aircraft, yet it remains undaunted. "Four players in that market segment are too many, but Fokker believes that it must be one of those four," Mr Marten Kuilman, the company's chairman, has said. A feasibility study on launching a 130-seat aircraft is due to be completed by the end of the year.

If necessary, Fokker says it would be willing to give up its independence to conclude a viable partnership. But company officials also emphasise that Fokker would not agree to a merger at any price and that it would continue to go it alone if need be.

Arranging a partnership is not an absolute precondition for launching a new aircraft, but it would certainly help. Although it can count on receiving grants towards developing a new aeroplane from the Dutch state, which holds a 32 per cent stake in the company, Fokker would also like to share the risk of launching a new product with a counterpart in the aviation world.

The company, which was rescued from the brink of bankruptcy in 1987 and has since returned to financial health, has made clear that it will not be content to become simply an assembly plant as part of any merger or partnership deal. It wants to remain actively involved in new product development as well as in marketing and product support.

The proposed 130-seat aircraft would essentially be a derivative of the Fokker 100, with two of the main differences being new landing gear and new engines. The company is also studying the idea of a Fokker 80, an 80-seat aeroplane incorporating a slightly stretched fuselage from the former Fokker Friendship and wing aerodynamics from the Fokker 100. This would give the company a full "family" of regional aircraft ranging from 50 to 130 seats.

Fokker's search for an aerospace partner takes it a significant step further than its existing cross-border sub-contracting ventures, such as the purchase of fuselages for the Fokker 100 from Messerschmitt-Boelkow-Blohm of Germany and wings from Short Brothers of Ireland.

The Dutch company's possible co-development of a 130-seat aircraft would also mark a new departure: the development and launch of the Fokker 50 and Fokker 100 in the early 1980s were solo efforts.

Talk of international co-operation is not new for Fokker. Indeed, in the 1960s and 1970s the Dutch company entered into partnership arrangements with Vereinigte Flugtechnische Werke of Germany and, later, with McDonnell Douglas of the US. However, both ventures were short-lived.

In 1987, when the Dutch government bailed out Fokker after it ran into difficulties, politicians were quick to say that the company should link up once more with another aeroplane to secure its future.

With Fokker now back in the black, the company is in a better position to negotiate a possible pact than a few years ago. Mr Kuilman – who will be succeeded by Mr Erik Jan Nederkoorn, the current finance director, when he retires in August – has declined to give details of the progress so far, saying only that the company has been in contact with all the world's aircraft builders.

A joint venture or merger with a US company would help cushion Fokker from its traditional vulnerability to the exchange rate of the dollar. However, with only a few North American companies to choose from, a European partner is more likely, analysts say.

The dollar's decline in 1990 wreaked havoc on Fokker's plans to resume its dividend payments after a gap of four years. Because it had hedged its dollar revenues to the end of 1991, Fokker's 1990 profits were not endangered by the dollar's decline. But the prospect of prolonged dollar weakness prompted Fokker to announce a wide-ranging cost-cutting drive at the end of 1990. With workers facing lay-offs and suppliers including Rolls-Royce being asked to lower prices, Fokker felt unable to pay out a portion of its profits to shareholders, in spite of its buoyant 1990 results.

Fokker's net profit rose sharply last year, doubling to Fl 88.4m ($43m) from Fl 42.2m in 1989. The steep increase was due mainly to a decline in financing charges, to book profits on divestments and to higher contributions from associated companies. Operating profit excluding interest charges rose by 21 per cent to Fl 93.8m.

The company has yet to enter profits from the sales of Fokker 50s and Fokker 100s on to its books.

Fokker says it will start taking profits on the sales of its new aircraft when the project as a whole reaches break-even point sometime in the mid-1990s.

The two aeroplanes are already making a positive contribution to Fokker's cash flow.

Fokker remains cautious about the outlook for 1991, saying much will depend on the value of the dollar and the readiness of airlines to resume ordering new aircraft. So far, the company has said only that the first quarter developed "according to plan". The company's order books remain well filled but the inflow of new orders, especially for the Fokker 50, slowed in 1990. This led to the departure in February 1991 of Mr Cees Biersma, the company's sales director. His successor, who has yet to be found, will automatically become a member of an expanded, four-man group managing board, underscoring the imperative of finding fresh customers for Fokker's existing two aeroplanes as it ponders and plans the launch of two additional aircraft.

Ronald van de Krol

SWEDEN

Dogfight over fighter's future

THE Swedish aerospace industry is engaged in a dogfight with the government over the future of the JAS 39 Gripen combat aircraft.

The programme to develop a combined fighter and ground attack jet with reconnaissance capability has been plagued by cost over-runs and delays. The problems have created tensions between the state and the JAS industrial consortium (IG JAS) led by Saab-Scania.

One source of friction is the fixed-cost contract that the consortium received in 1982 to develop the aircraft and deliver its first 30 units. The industry said it was forced to accept the strict contract terms under duress, with the government otherwise threatening to shut down the Swedish aerospace industry by placing its order abroad for a new combat jet.

"The problem with the contract is that technical solutions cannot be produced in a limited time and cost framework supported by penalty clauses," said Mr Georg Karnsund, the former chairman of IG JAS, in his farewell speech as Saab-Scania president to shareholders last month.

Problems with the computer software that controls the JAS aircraft's fly-by-wire flight system caused the first JAS prototype to crash in February 1989. This helped push the project more than two years behind schedule and increased development costs, which the industrial partners have to bear under the fixed-cost contract.

Saab-Scania estimates that it has suffered SKr2bn ($326m) in extra costs for JAS in the past three years. Analysts estimate ... ...nia's loss margin on the JAS during the development phase could be 20 per cent.

The increased cost of JAS has dragged down the profitability of the company's aerospace division. In spite of buoyant sales for the Saab 340 and Saab 2000 commuter aircraft, the division made a modest profit of only SKr111m last year on turnover of SKr4.3bn.

The JAS consortium, which also includes Volvo Flygmotor and Ericsson, has been seeking a higher price for a second order of 110 aircraft to help recover the spiralling development costs. But the government last November rejected their bid, which is believed to ask for a 50 per cent increase on the SKr12bn earmarked for the purchase of this aircraft batch. Officials explained that the total project was already exceeding its original budget of SKr54bn by SKr9bn.

In a show of displeasure, the government also announced that it would delay placing its order for the 110 aircraft by one year until mid-1992. It accused the JAS consortium of failing to achieve promised technical and performance standards due to a lack of management supervision and resources and said more flight tests and development work were needed.

The sharp official rebuke led to a shake-up of IG JAS's top management early this year. Mr Bjorn Svedberg, the chairman of the telecommunications concern Ericsson, succeeded Mr Karnsund as chairman of the IG JAS group. Mr Hans Ahlinder, vice-president of Saab-Scania's defence technology division Combitech, replaced Mr Harald Schroder as IG JAS president.

The new leadership is adopting a conciliatory tone. Talks about the order for 110 aircraft are due to resume in October, with the government and parliament expected to take a final decision before July 1992.

The consortium's negotiation position has been strengthened recently by a progress report on the JAS conducted by FMV, the Swedish defence procurement agency, which predicts that the aircraft will achieve its technical and flight performance goals.

The programme to develop a combined fighter and ground attack jet has been plagued by delays

The negotiations over the second stage of the JAS, nevertheless, are expected to be tough. In addition to seeking a higher purchase price for the aircraft, IG JAS also wants the government to approve funding for the development of a two-seat JAS trainer version.

The consortium argues that the trainer aircraft is necessary to win export orders. It has already bid for an order from the Finnish Air Force and hopes to sell the aircraft to other small European countries.

Although the JAS project is facing political opposition, parliament is likely to approve a follow-on order, especially if the non-socialists gain a majority of seats after the elections in September. The government might, however, split the order into two or more stages to make it politically more acceptable.

But JAS is not the only worry confronting Saab Aircraft. In spite of a rapid increase in sales for its commuter aircraft during the past five years, orders could level off over the next several years as the airline industry falls into recession. This has raised concerns about the ability of some customers to pay or take delivery on aircraft ordered.

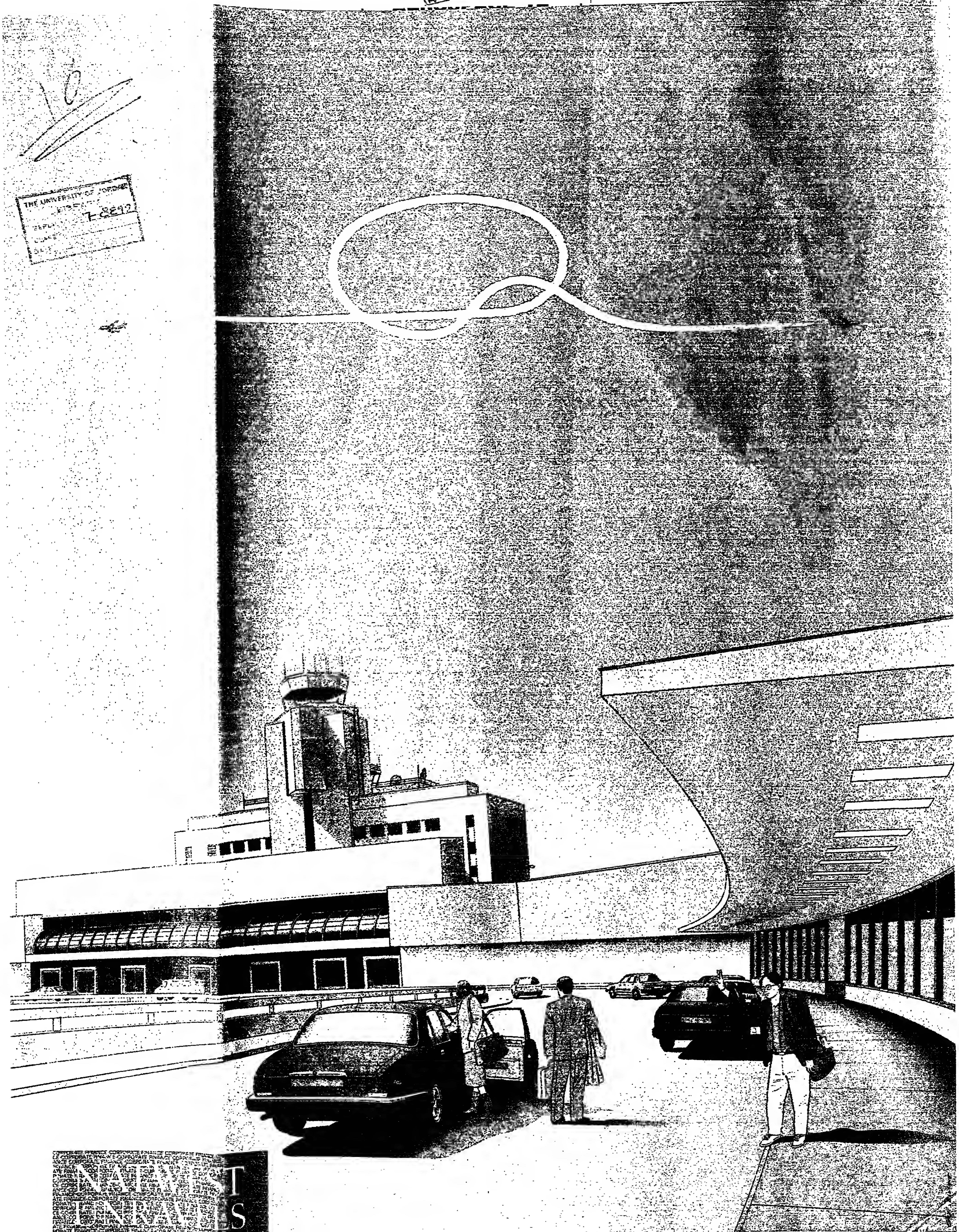
In addition, the global market for medium-sized commuter aircraft, of which Saab claims a 36 per cent share, is likely to grow more competitive as more aircraft makers enter the field.

The Saab 340 only achieved profitability last year and it will take several more years before the Saab 2000 generates earnings.

Saab has stepped up its production of the Saab 340 from 32 aircraft in 1989 to an expected 55 aircraft this year. It has delivered two-thirds of the 337 Saab 340 ordered to 30 operators, with American Eagle, the regional carrier owned by American Airlines, being the biggest customer with 120 aircraft.

The Saab 2000, a bigger 50-seat version of the Saab 340, is expected to be rolled out at the end of this year. After flight tests are completed next year, deliveries will start in 1993 with the first customer being Crossair of Switzerland. The Saab 2000 has received 46 firm orders and options for another 134.

John Burton



NATWEST UNRAVELS THE MOST COMPLEX AEROSPACE PROBLEMS.

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